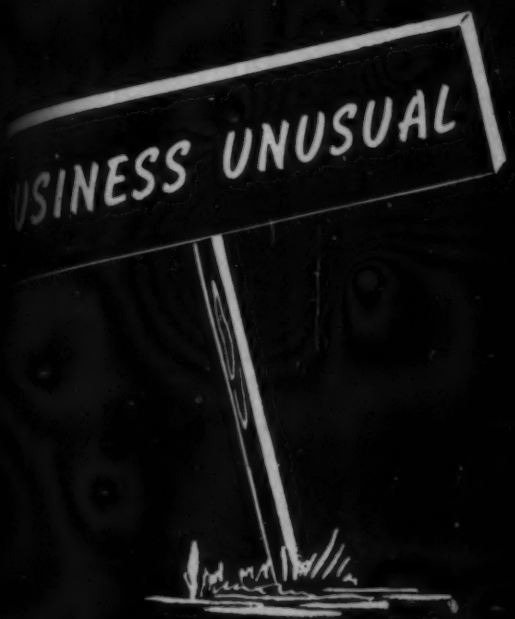
SOAP

and

SANITARY CHEMICALS



There is much that even a perfume manufacturer can do towards winning our war. Our plant and its facilities consider such work as their main concern.

Of course, our ability to produce perfumes has consequently been limited, but we are still supplying and can probably fulfill your perfuming requirements.

VAN AMERINGEN-HAEBLER, INC.

315 FOURTH AVENUE · NEW YORK CITY

June 1942

IN THE DARK?

Turn the light on today's perfuming problems —and take advantage of D & O's 144 years of experience in the Aromatic Chemical Field.

Today—as in many other trying times—D & O customers are maintaining the quality and identity of their established products.

So don't "grope"—"Call D & O"

DODGE & OLCOTT COMPANY

180 VARICK STREET · NEW YORK, N. Y.

BOSTON · CHICAGO · PHILADELPHIA · ST. LOUIS · LOS ANGELES

Plant and Laboratories: Bayonne, N. J.

D.O
ESTABLISHED
1798

Transportation 1943?

IF NECESSARY, YES!

And those of us who don't own an elephant, or a horse, or a donkey . . . well, we'll walk.

BUT WE WILL NOT CRAWL!

Any American will gladly relinquish every single earthly possession . . . his car, his land, his money . . . if any or all will help him keep his self-respect, his right to determine how he will live.

Today . . . not tomorrow, but TODAY! . . . every tiny fragment of American productive energy must be harnessed to bolster the efficiency of the United Nation's armed forces. Fuld Bros. facilities are geared to that aim . . . and are operating at peak capacity to fulfill the nation's health requirements.

Fuld Brothers

FULD SELLS JOBBERS ONLY! • FULD MAKES IT FOR THE LEADERS

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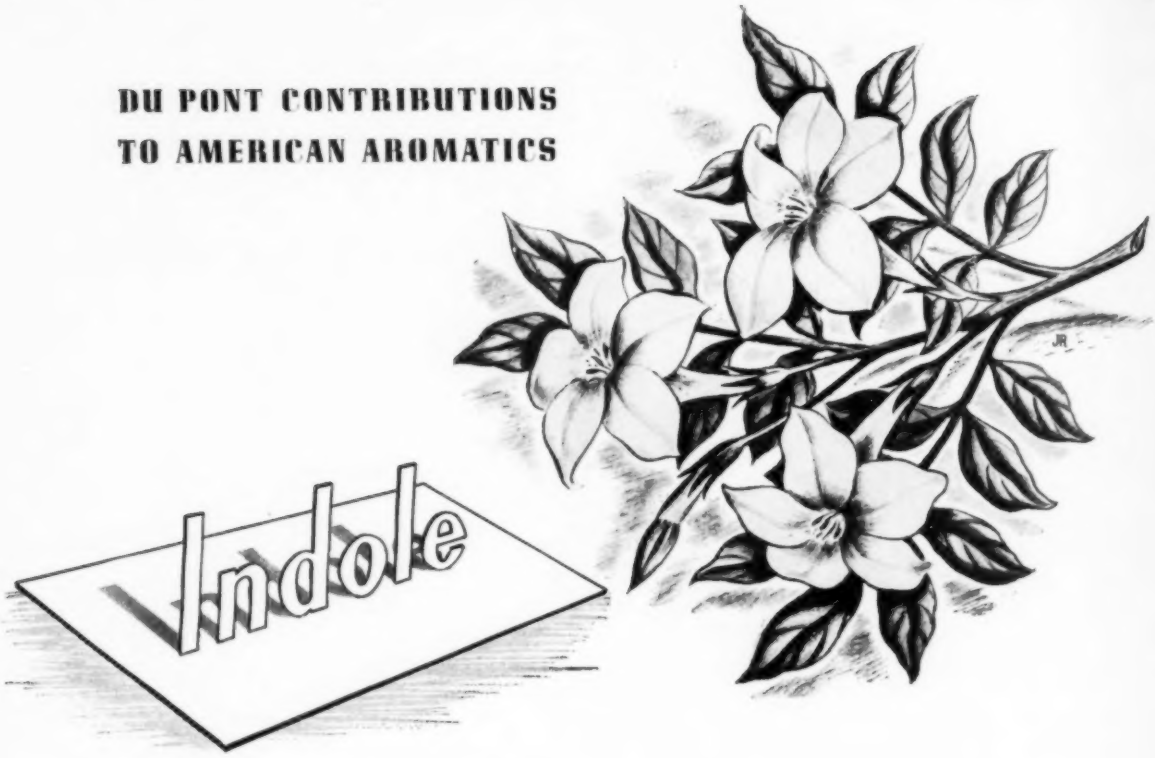
Liquid Soaps, Floor Seals, Floor Treatments, Deodorant Blocks, Liquid Deodorants, Plumbing Specialties, Special Cleaners, Self-Polishing Waxes, Powdered Waxes, Oil Soaps, Liquid Cleaners, Disinfectants, Insecticides, Metal Polishes, Furniture Polishes, Deodorant Block Holders, Soap Dispensers.

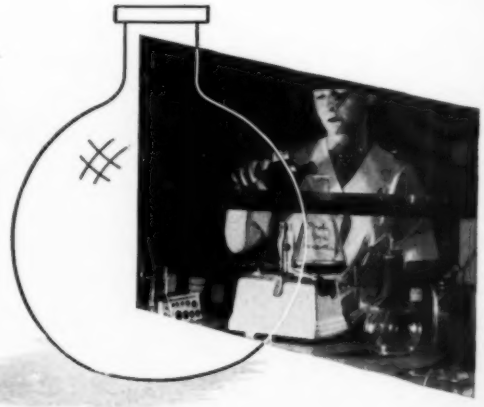
DU PONT CONTRIBUTIONS TO AMERICAN AROMATICS



In the fall of 1940, Du Pont announced the first production of Indole in this country. As in the case of Alpine Violet (cyclamen aldehyde) and Skatole, production of Indole met a specific wartime need. ☆☆☆ *In addition to such research in specific problems, Du Pont aromatics benefit from the broad, interdependent research program maintained by Du Pont. For instance, synthetic camphor led to Isobornyl Acetate. Research in giant molecules opened the way to Astrotone fixative. And Anisic Aldehyde was linked with a new pharmaceutical chemical.*

*TRADE-MARK REG. U. S. PAT. OFF.

From the many fields of Du Pont research have come many contributions to American aromatics. Many more will follow. Odor quality, purity, stability, and freedom from wild price fluctuation characterize all these products. New uses developing now forecast a broader and important place for synthetic aromatics after the war.



DU PONT

Aromatics

E. I. DU PONT DE NEMOURS & CO. (INC.), FINE CHEMICALS DIVISION, WILMINGTON, DELAWARE

Volume XVIII Number 6

SOAP and SANITARY CHEMICALS

Reg. U. S. Pat. Office

JUNE
1942

SANITARY Products Section, which forms a part of every issue of SOAP, begins on page 75.

MEMBER AUDIT BUREAU OF CIRCULATIONS

Contents

- Editorials 21
- War Time Problems of the Soap Maker..... 23
  By Alan Porter Lee
- Formula Problems of the Potash Soap Manufacturer 27
- Saddle Soaps 30
  By Paul I. Smith
- Action of Soap on the Skin..... 32
- Theories of Detergency..... 59
- Insecticide Disinfectant Meeting..... 102
- Synthetic Phenol Disinfectants..... 109
  By Jack Varley
- Effect of Temperature on Recovery of Housaflies 115
  By Craig Eagleson
- Pyrethrum vs. Roaches—Part II..... 119
  By Dr. F. L. Campbell
- Selling the Government..... 129
  By Melvin Fuld
- Contracts Awarded 47
- New Trademarks 49
- Raw Material Markets..... 53
- Raw Material Prices..... 55
- Products and Processes..... 65
- New Patents 67
- New Equipment 71
- Classified Advertising 143
- Advertisers' Index 151

Published by

MAC NAIR-DORLAND COMPANY, INC.
254 WEST 31st STREET NEW YORK, N. Y.

Subscription rate, $3.00 per year. Foreign, including Canadian, $4.00. Copy closing dates—22nd of month preceding month of issue for reading matter and 10th of month preceding month of issue for display advertising. Reentered as second-class matter, Feb. 9, 1938, at Post Office, New York, under act of March 3, 1879. Mail circulation May, 1942, issue, 3,754 copies. Total circulation, 4,000.

conserve soap stocks *maintain quality* with

STANDARD SILICATE OF SODA

Use STANDARD SILICATE to make your soap stocks go farther —at the same time reducing costs and maintaining the quality of your soap through increased detergency, retarded rancidity, better sudsing power.

The guaranteed purity of STANDARD Silicate is your assurance of dependable uniformity. Our Technical Service will gladly help you apply the formula that will give best results *in your particular case!*

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4 BIG POINTS about DYT BLACKOUT COMPOUND

1 COMPOUND—*NOT* PAINT

Eliminates drawbacks of paints (will not crack—safe on glass).

2 EASY TO APPLY

May be either sprayed or brushed as per simple directions.

3 GIVES GOOD COVERAGE

One gallon covers 400 to 500 square feet of surface.

4 EASY TO REMOVE

Brush or spray with ammonia water. Then flush with ordinary water.

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THE DAVIES-YOUNG SOAP CO., Dayton, Ohio:
Please send us samples, description and prices of your Blackout Compounds.

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Address_____ State_____

City_____

Aromatics for soap

BY Albert Verley AND COMPANY

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Now "made in U.S.A."— freeing you from dependence on foreign sources

Aliphatic Aldehydes

C-8 (Octyle) 100%
C-10 (Decyl) 100%
C-11 (Undecylenique) 100%
C-12 (Laurique) 100%
C-12 (Methylnonylacetique) 100%
C-14 (Peche)

Formerly these fine chemicals — with their welcome addition to the distinction and sales appeal of your perfume compositions—were available only from European sources, at prices beyond the reach of the soapmaker. • Today they are manufactured 100% in our Chicago laboratories, at practical prices, and the perfume industry is using them widely with notable success.

Aldehyde Gras Superieur

A powerful floral character particularly of interest for Violet or Lilac top-note.

Geranium Synthetic

. . . . . also Lavender Synthetic, Bergamot Synthetic.

Both Rose Geranium Bourbon and Rose Geranium African have been reproduced by the House of Verley with amazing fidelity to nature — thus enabling you to save money while maintaining your reputation for quality. Equal progress has been made in the synthesis of Lavender and Bergamot.

Write for working samples and prices—which, in view of the quantities required, are well within the soapmaker's means.

HERE COMES FRAX
NO SLIPPERY SOAP FILM
BRINGS OUT THE NATURAL COLOR OF FLOORS
FRAX
SEALS THE PORES
AND WHAT A LUSTRE! -O-ME- O-MY!
NOT A SOAP BUT CLEANS SAFER
It's a Brand New Formula-Discovery

FOR ASPHALT TILE and TERRAZZO FLOORS

Keeps them clean, non-slip, lustrous—without soap or waxing.

Let's all of us stop arguing with those finicky lads who balk at waxing their floors. Let's "yes" 'em into a sale. That's sound merchandising—and that's the idea behind FRAX.

FRAX is not a wax—but what a shimmering lustre it leaves. It's not a soap—but it cleans better and safer . . . lifts the dirt out of the pores and seals 'em up . . . and how it brings out the natural color of faded floor surfaces!

Get yourself a sample of FRAX. Then take a list of buyers who baby their floors . . . afraid to use wax and scared of soap . . . show them FRAX—

. . . and watch that "where-have-you-been-all-my-life" look on their faces. Wait till you try out your sample—you'll see what we mean. Write today—*it's big business!*

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Send samples and prices of FRAX.

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S-6-42

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Javonella

Perfect for Perfuming

★ LAUNDRY SOAPS ★ WASHING POWDERS ★ LIQUID CLEANSERS ★ POLISHES, ETC.

EVEN when oil of citronella was low in price and easy to obtain, JAVONELLA was a reliable favorite. A great many manufacturers preferred its finer, cleaner odor, its uniform quality and consistent economy. And now that Citronella is so high in price and difficult to get, JAVONELLA is more important to you than ever before.

WRITE FOR SAMPLES AND QUOTATIONS

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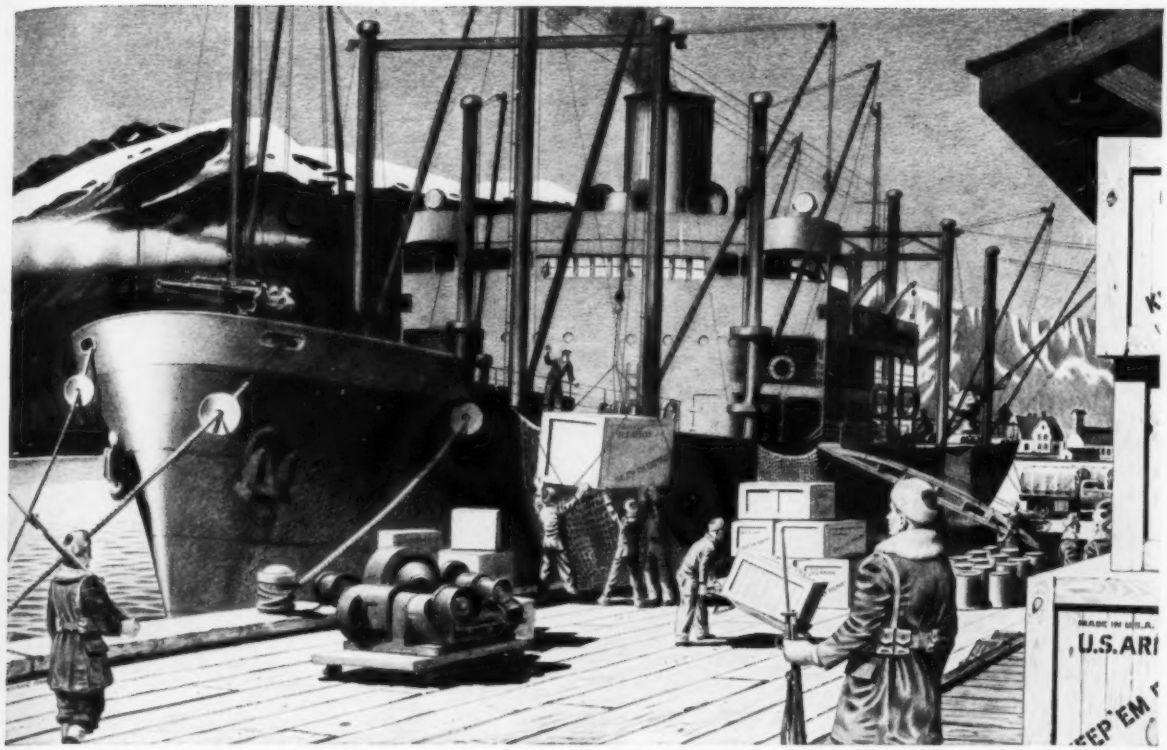
599 Johnson Ave., Bklyn, N. Y.
BRANCHES IN PRINCIPAL CITIES

Manufacturers of AROMATIC CHEMICALS, NATURAL DERIVATIVES, PERFUME AND FLAVOR OILS



FROM ICELAND to the West Indies—from Alaska to Australia—our troops must have the best possible food on which to fight. They get it with canned food. It provides them with balanced, nutritious meals, saves shipping space, eases the supply problem.

No more tin plate for many of you . . . means more "square meals" for them

ONLY THE BEST possible food is good enough for our troops. They must have this food in greater and greater quantities. That's why there'll be no more beer, coffee, and many other items packed in tin plate, as we get deeper into the war.

This saves many tons of tin that will go into cans in which more food for carrying on the war will be packed. Food for our fighting forces. Food for civilians behind the lines. (Tin cans, as you may know, are the perfect containers for processed foods.)

So—until the war is won, you'll have to do without the convenience, beauty, and traditional sales appeal of many tin-plated packages.

Many substitute packages may be offered to you for your products. They may not be so good as the familiar *tin* package, but they'll be the best you can get while there's a war on.

And you can do your part by using your business imagination and capitalizing on these substitute containers. Adapt them to your filling lines. Sell them to your trade. Explain to your trade why these substitutes are necessary for the duration.

REMEMBER: The Government is doing a great job . . . for you, for all of us . . . in controlling the tin supply and directing it where it will do the most good.

In our own laboratories, research on containers is going steadily forward. This research promises not only to improve present containers for your use during the war, but also to develop even better containers of all kinds for your use after the war. AMERICAN CAN COMPANY, NEW YORK, N. Y.

SOME TYPICAL WAR ITEMS MADE BY CAN MAKERS

For our armed forces, can makers supply various types of containers for:

—food rations, explosives, bandages,
—oil, blood plasma transfusion kits,
—delicate anti-aircraft motors,
—emergency water rations, and
—countless other necessities for fighting men.

SCARCITY . . . INCENTIVE TO

Close one door? Then, open up another! That's the American way of overcoming obstacles. As a Nation we have *never* resigned ourselves to fretting, fuming or just waiting hopefully for conditions to change. Now as the demands of "all-out" war production dip deep into our material resources and critical shortages of vital supplies begin to loom, we again do something about it . . . confidently.

Optimists? Sure we are! Not in the sense of complacent wishful thinking, but in the conviction that there's always a way to meet conditions by facing the facts squarely and then doing something about them. The busy world of chemical research has repeatedly come through.

Here are a few examples that graphically show what can be done . . .

(*Below*) RUBBER FROM OIL. With our normal source of rubber imports shut off probably for the duration, chemical ingenuity has opened up a new source of supply that may eventually make the U. S. completely self-sufficient for this essential material. Already being developed on a vast scale, the expected yield of rubber, together with other synthetic rubber production, may in time fill our national requirements.

(*Above*) SYNTHETIC SILKWORMS AND WOOL FROM MILK. Sheer hose of nylon and winter "warms" from casein fibers are other important additions to the fast-growing list of practical, synthetic solutions to material problems.

(*Right*) PLASTICS FOR METALS. With most metals vitally needed for war production, plastic materials are stepping in to fill many essential needs, such as for containers and closures, lighting reflectors, and many wartime as well as essential civilian needs.

Achievement

(Above) HERE AT GIVAUDAN we are endeavoring to carry on with this same typically American pioneering attitude of undeterred determination toward the job in hand. To overcome the handicap of necessary limitations on critical raw materials, we are continuing our efforts to develop satisfactory substitutes and alternate products from non-critical sources. As rapidly as these developments materialize, we shall pass them along to the benefit of users of aromatic chemicals and pharmaceuticals. In the meantime, we will continue to meet your needs on materials that are available. And you are invited to consult with our technicians and chemists who will welcome the opportunity to work with you on the solution of specific problems.

GIVAUDAN-DELAWANNA, INC.

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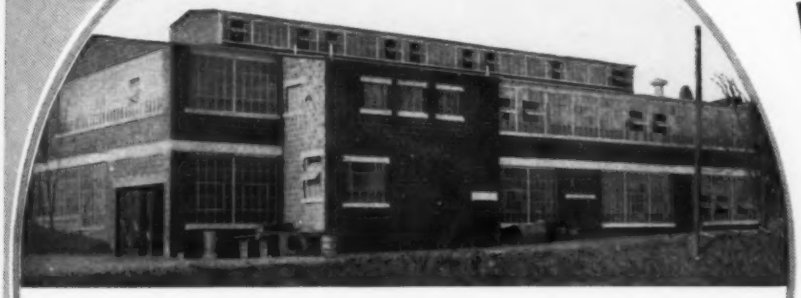

READY TO SERVE YOU

Whatever your requirements in the field of perfume and deodorant oils, our factory and laboratories are fully able to service them. All of our products are designed and produced with a complete understanding of the job each one has to perform. That means they are thoroughly tested in the finished type of product for which you intend to use them. If the product you manufacture calls for a perfume or deodorizer, let us help you select the proper one for your needs. We will be glad to submit samples and prices for your consideration.

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WILL YOUR LIQUID SOAP *HAVE* HALITOSIS?

"The replacement of coconut oil with domestically produced vegetable oils having *high iodine values* will predispose liquid soaps made therefrom to *decomposition* when in prolonged contact with such metals as are commonly used in manufacturing parts of metal soap dispensers. Our tests show the *plastics you use* in no way contribute to decomposition which causes bad odors."

—Extract from a report of independent, well-known chemist. *Italics* ours.

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BOBRICK'S VICTORY PLASTIC MODELS

Both models are fabricated from sturdy plastic material in a beautiful, marbelized ivory and green color that blends with any installation. The jar is "Duraglass"—toughest obtainable, and unique is the strong bracing rod and wall plate (an exclusive Bobrick feature) that provides absolute rigidity for the bracket. Either model is unbelievably low in price—but high in quality; and, of course, they carry our 36 year unconditional guarantee for complete satisfaction or your money back.

MODEL No. 13

✓ SAVE METALS
✓ SAVE OILS
✓ SAVE MONEY
✓ KEEP CUSTOMERS HAPPY WITH OUR

VICTORY MODELS

WRITE FOR LITERATURE

BOBRICK MANUFACTURING CORPORATION

15 East 26th Street
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"Our 36th Year"

Norda

Scarcity of floral oils . . .

Present dwindling supplies of natural floral essences emphasize the value of high quality substitutes.

Synthetic floral essences can be used to replace the natural oils with full satisfaction and marked success in numerous products,—toilet soaps, shampoos, shaving creams, powders, creams, and many others.

In fact, in many products the newer synthetic floral essences are to be *preferred* for the manner in which they reproduce the true fragrance of the living flowers in the finished product,—not to mention uniformity of quality and odor fidelity, and their economy under present conditions.

Let us tell you more about these newer substitutes as an answer to the growing scarcity of natural floral oils.

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PERFUME BASES

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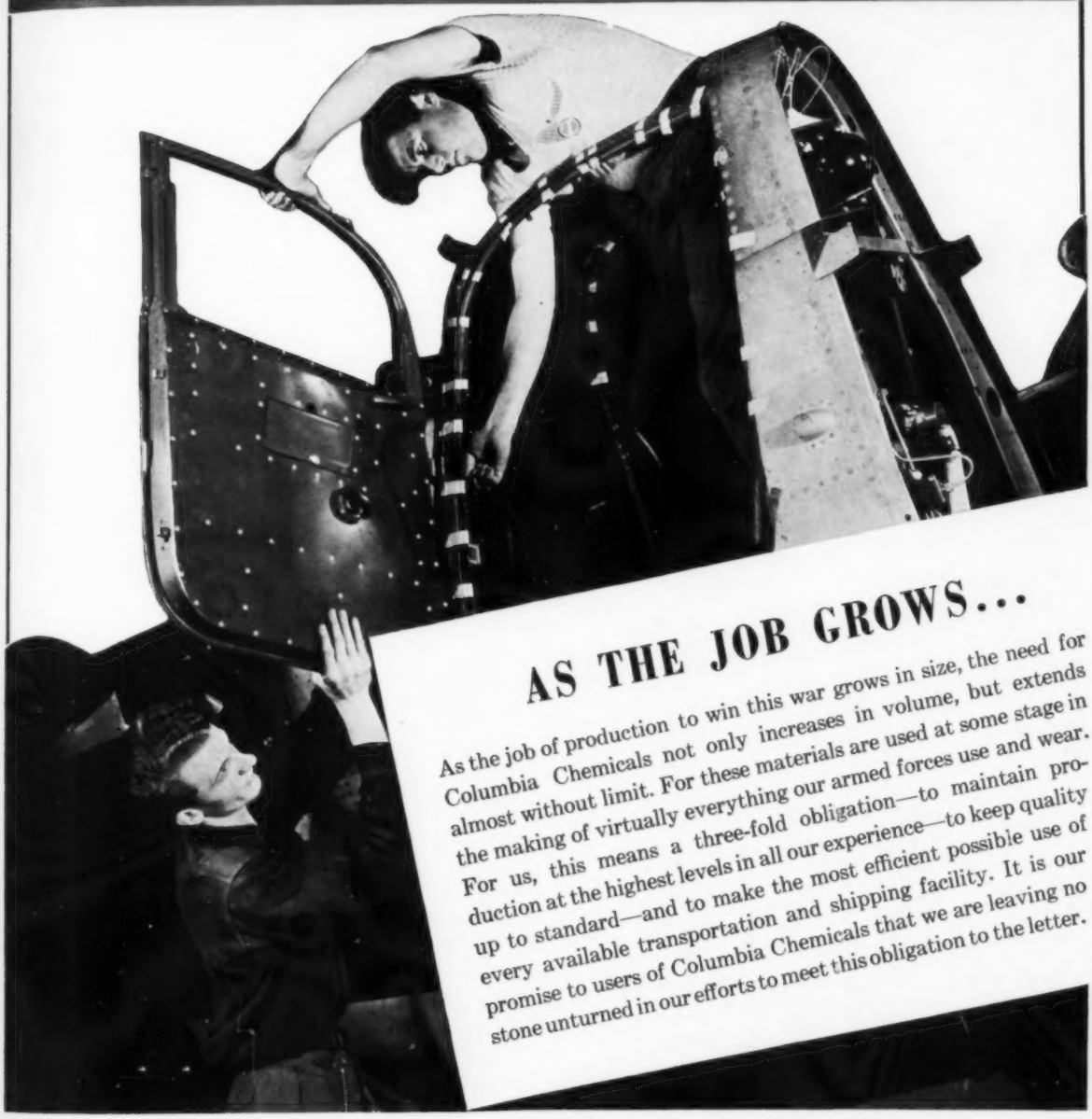

AS THE JOB GROWS...

As the job of production to win this war grows in size, the need for Columbia Chemicals not only increases in volume, but extends almost without limit. For these materials are used at some stage in the making of virtually everything our armed forces use and wear. For us, this means a three-fold obligation—to maintain production at the highest levels in all our experience—to keep quality up to standard—and to make the most efficient possible use of every available transportation and shipping facility. It is our promise to users of Columbia Chemicals that we are leaving no stone unturned in our efforts to meet this obligation to the letter.

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COLUMBIA CHEMICAL DIVISION
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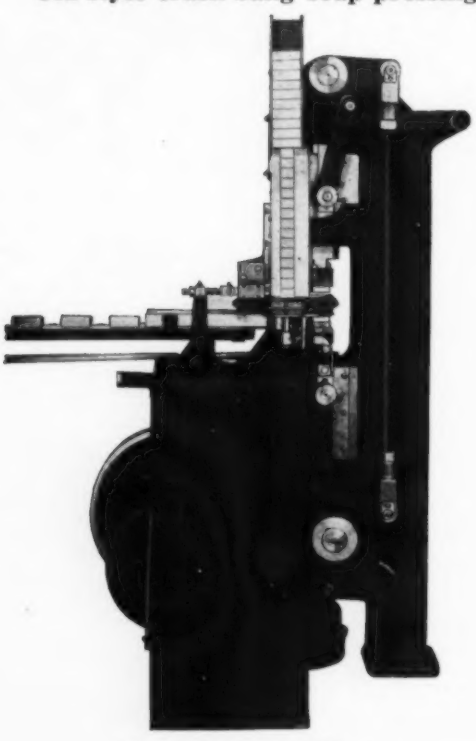
CHICAGO • BOSTON • ST. LOUIS • PITTSBURGH • CINCINNATI
CLEVELAND • MINNEAPOLIS • PHILADELPHIA • CHARLOTTE

. . . less noise!

THE constant crash-bang-bang of old and worn soap presses reduces the working efficiency of every employe in your plant . . .

Today, more than ever before, with labor scarce and wages higher, annoying interferences with efficient working conditions cost you real money . . .

Old-style crash-bang soap pressing



Type ET Toilet Soap Press

Type K Laundry Soap Press

is unnecessary and expensive. You can eliminate noise and vibration, and spare the nerves of your workers by replacing old presses with

JONES
Toggle Operated
PRESSES

With new JONES Toggle Operated Presses, perfect pressing at lower cost is yours, plus greater output, no marred cakes, silence and contented operators.

Old presses are an expensive economy—why not replace them NOW with new JONES Toggle Presses.

R. A. JONES & COMPANY, Inc.

P. O. BOX 485 CINCINNATI, OHIO

The Standardized Constant Motion Cartoner packages, bottles, jars, tins, collapsible tubes and many other articles. It feeds, folds and inserts direction sheets and corrugated board liners with the loads.

AS THE EDITOR SEES IT

MORE soap was sold by manufacturers during the first quarter of 1942 than in any previous quarter-year in history. According to the figures of the Association of American Soap & Glycerine Producers, and allowing for soap production not included in their summary, the total output of soap by the soap industry,—not including those who produce soap but are not primarily in the soap business,—was probably well over one billion pounds for the quarter. Total soap sales for the first 1942 quarter were 35 per cent in value above those for the same quarter of 1941. They were some 78 per cent higher than the quarterly average for the five years from 1935 through 1939, a period which might be termed "normal."

Interpretation of these record-breaking figures might be made in several ways. With a nation at war and intensively at work, they could be accounted for by a marked increase in consumption, both industrial and household. But we happen to know that any such increase in consumption accounts for only a part of the larger sales, and that stocks of soap in all quarters have increased sharply since last January first. From the pantry shelves of the average American home right through distributing channels to the wholesaler, soap stocks have been built up against that day when soap will become scarce and high-priced,—and even rationed if you believe the inside tip which *Printer's Ink* revealed a few months ago. Under ordinary conditions, soap will keep well in storage. It is a logical product to buy and hoard. It can always be used,—or sold. And after all, we are at war, and nobody knows for sure just what might happen. Inflation! Reduction in soap quality because of the coconut oil scarcity! The stage was set for record-breaking purchases of soap following Pearl Harbor, and the play has followed the script all the way.

Since the first of April, the start of the second 1942 quarter, manufacturers' sales of soap have fallen off and for the past two months stocks in soap factories have grown considerably. But it is not believed that there is any great excess of soap stocks in the hands of manufacturers today because of the reduction in inventories by the tremendous rate of sales from January through March. However, it would not be surprising to see some increase in manufacturers' inventories over the next few months. Even with soap consumption heavy, large stocks in the hands of wholesalers and dealers will probably act to hold buying closer to immediate sales requirements. Establishment of price ceilings will likewise have its effect by removing the incentive to stock up still further in anticipation of a continued upswing in prices.

For the soap industry, the current heavily-stocked condition of distributing channels may be a keg of gunpowder before the present unpleasantness is over. It may have a dozen ramifications and repercussions, no one of which has too much of a rosy hue. But what is sold is sold, and there is not too much which can be done about it. Whether we have an overproduction of soap in this country is a moot question right now. What would happen upon a sudden termination of the war? Would the export demand from a soap-starved world take up all our

surplus and more besides? Has actual domestic consumption increased to a greater extent than we believe? All are questions impossible to answer accurately. The fact remains that soap stocks in all distributing channels are heavy, unusually heavy we are told. This, in itself, under present conditions may not mean too much,—but then again, it may. Maybe a bit more pressure on the sales brake pedal is called for over the next month or two.

EVERY so often the subject of synthetic glycerine pops up in the form of an enthusiastic article in the trade press. Recently, we read that glycerine was very likely to be produced on a large scale from petroleum to augment our war output of soap-kettle glycerine. This happens to be just one report. For the past twenty-five years, at any time when glycerine was scarce or prices high, synthetic glycerine has been heralded as being just around the corner.

Even with current war and lend-lease demands, as far as we can find out, synthetic glycerine is right now a dead duck. Plans for a synthetic glycerine plant which one of the large petroleum companies contemplated for a year or two, were some time ago definitely abandoned. There seem to be no others on the glycerine horizon, for any such plant erected now would unquestionably be a complete white elephant with the end of hostilities whether that be a year or five years hence.

Under normal conditions, experience has shown that synthetic glycerine cannot be produced on a competitive basis. What is more, even with the present tremendous demand for glycerine, the soap industry and the fat splitters are doing a pretty good job in taking care of our needs. Though glycerine today is the primary product of the soap industry in a nation at war, it is in time of peace a by-product which in sharp competition has been and can always be sold as such. As long as the soap production of the country keeps close to its present high levels, there will always be adequate glycerine, and equally, discouragement for synthetic glycerine manufacture.

A LEADING soap firm is doing a rather good job in putting across the advertising of one of its newer products. We can't hand them any bouquet, however, on their offer of a reward of a thousand dollars for anybody who can find a "safer" soap than the product in question. To garner the money, the offer stipulates that scientific proof must be submitted that some other soap is safer for washing fine raiment. In view of the recent findings by a laboratory specializing in checking up on various household products, cases of fabric damage traceable directly to the soap used, even in the instance of soap powders containing a comparatively high percentage of added alkaline salts, were found to be rare. Mostly, the fabric, dye or something else were at fault, and the soap was not a factor in the damage. In the light of these findings, why not raise the ante to ten thousand? Nobody would be likely to collect it anyway.

THE soap industry's policy of figuring fat costs on a long-term average, and shaping selling prices on this figure rather than on the variable day-to-day market, bids fair to bankrupt a large share of the industry as a result of imposition of price ceilings. Soap prices are fixed at the March levels, in spite of the fact that those levels did not truly reflect higher raw material prices. The situation is an extremely serious one for the industry, and it is to be hoped that present conversations with Washington result in disclosing some formula by which the soap maker's lot may be ameliorated.

War Time Problems of the SOAP MAKER

THE problems confronting the American soapmaker as a result of the extension of World War II into the Pacific theater are many and serious. Of most far-reaching effect has been the practically complete suspension of movement of coconut oil and copra from the Far East to our markets. As Japanese soldiers have swarmed south, each day's news has brought new grief to the soapmaker and to his purchasing agent. Luzon, Cebu, Mindanao, Macassar, Celebes, Borneo, Malaysia, Sumatra, Java, Timor, New Guinea, New Britain, The Solomons, Bali, Molucca,—thus reads the roll, sounding more like an exclusive copra and coconut oil buyer's Atlas than like anything else. Even the earliest blow struck at India brought Ceylon, the last free coconut area of any importance, under the bombs.

In spite of the fact that we have on hand at present fairly good stocks of coconut oil and some small stocks of copra, the soapmaker must face complete loss of this valuable kettle ingredient at an early date. As is well known, for many years the kettle man has looked upon coconut oil as a primary indispensable. Lathering power, light color, milling qualities, have all been considered directly dependent upon the percentage of coconut oil present in the formula, but now,—*there isn't any more!!* The specialty manufacturers, with their cold-made soaps, liquid soaps, shampoos, will feel the loss even more than will the makers of boiled soaps. The situation becomes a challenge to the soap industry and to its chemists and technologists.

First substitute for coconut oil, already tried and being used,—looked upon as the next best detergent,—is rosin. Extensive attempts to replace coconut oil with rosin have been based chiefly on the relatively low-titer characteristics of both products, but in cleansing qualities, in appearance and in other properties, the resulting tallow-rosin soap leaves much to be desired.

TABLE I
Comparison of Characteristics of Coconut and Babassu Oils

	Specific Gravity	*Saponification Value Average*	*Iodine Value (Wijs)*	*Titer Test*	*Reichert-Meissl Value*
Coconut	0.926 at 15°C.	260	8.5- 9.0%	23.5-25.0°	6.6-7.0
Babassu	0.868 at 100°C.	248	14.0-16.0%	22.7-23.0°	5.8-6.2

Much has been said and written about the great value of babassu oil as a substitute or replacement for coconut oil in soap manufacture. It is true that babassu oil closely resembles coconut oil in most of its chemical and physical characteristics as may be readily seen from Table I.

The only difficulty encountered in full substitution of babassu oil for coconut oil in the soap kettle is to be found in the comparative scarcity of babassu. During the past 25 years the United States has been flooded with stories of the vast quantities of babassu oil available in Brazil. These stories have emanated from explorers and other adventurers who have described the "huge forests of babassu trees" with the ground beneath them carpeted *"four to six feet"* deep with fallen nuts. All of these reports *may* be true, but the difficulties of harvesting the nuts in a tropical wilderness, of cracking the thick woody shell which surrounds the babassu kernels, of finding cargo space for kernels or steamers' deep tanks to transport oil, have had the net result that babassu imports (of kernels or oil) to the United States have been pitifully small in comparison to the soapmakers' normal consumption of coconut oil. Table II shows the slimness of any hope that babassu oil will fill the role of coconut oil at any time in the near future.

From Table II it is apparent that total babassu oil consumption in

Auxiliary Processes which can aid in maintenance of quality in the face of raw material scarcities and rising costs

By Alan Porter Lee

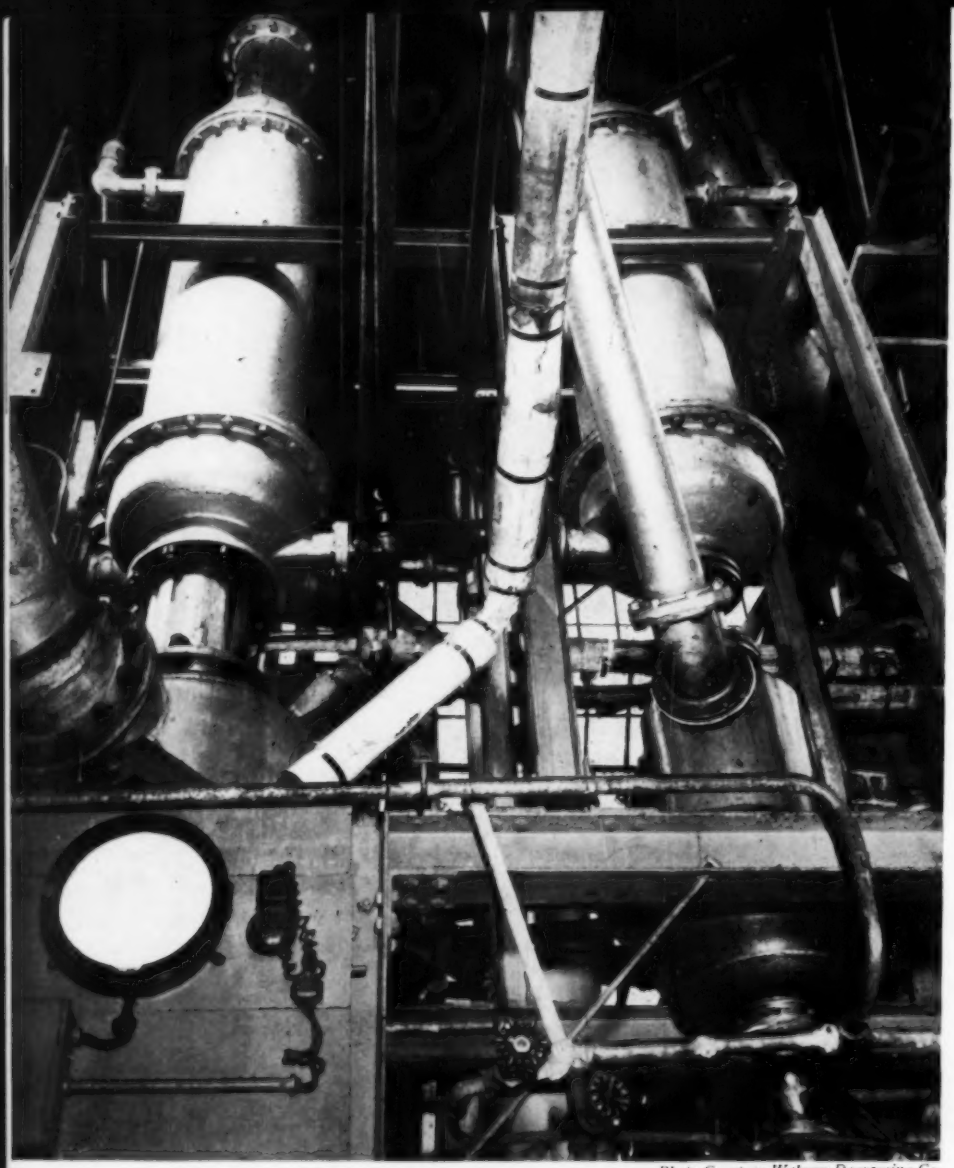


Photo Courtesy Woburn Degreasing Co.

Pure distilled fatty acids are products of modern fat chemistry plus modern equipment. View of the condensers for a fatty acid still in the plant of a large manufacturer. This equipment makes possible production of fatty acids "tailored" for special requirements.

1941 was only about 6.25 per cent of coconut oil consumption in the same year. For the present and for the *immediate* future, at least, it appears that the main reliance of the soap producer for replacement of coconut oil must be upon palm oil and palm kernel oil. Both these oils have qualities resembling coconut oil, palm kernel oil particularly approaching coconut very closely. Table III shows the relations of properties of the three oils.

TABLE II

Comparative U. S. Factory Consumption of Coconut and Babassu Oils—1941*—In Pounds

Consumed in	*Soap*	*Shortening*	*Other Edible Uses*	*Other Technical Uses*	*Total*
Coconut	484,124,000	22,069,000	83,942,000	9,559,000	599,694,000
Babassu	29,753,000	——	7,623,000	54,000	37,430,000

*U. S. Census

It is apparent that palm kernel oil may be substituted freely for coconut oil and that palm oil may be used to a certain extent in place of a mixture of tallow and coconut oil. Shipments of palm oil and palm kernel oil to the United States from Sumatra, Java and other East Indies points have, of course, been discontinued. There are shipments of some magnitude, however, from various points which remain at this writing free of Axis invasion.

For palm oil, the soap manufacturer must compete with other industries, some of them most essential to the war program. This fact will limit use of palm oil in soaps, although there are methods of utilizing in the soap industry quantities of palm oil which have been recovered from war industries after performing their function therein.

It is in his search for a satisfactory formula change which will compensate for the reduction or entire elimination of coconut oil that the soapmaker finds greatest appreciation of the presence of auxiliary fat treating equipment in his plant. The soap factory which is equipped with oil refining and bleaching apparatus, with autoclaves or Twitchell hydrolysis equipment, with fatty acid distillation plant or best of all, with all of these auxiliaries, is in the most favorable position for maintenance of quality of finished products in the face of war-time restrictions of normal raw materials.

Fat Refining Equipment

THE purpose of fat refining, for edible or for soap-making purposes, is primarily the removal of small quantities of impurities the presence of which would be detrimental in one way or another to the quality of the finished products.

When the oil is refined for edible purposes, the impurities removed consist of free fatty acids, coloring matter, albuminous (nitrogenous) materials, phosphatides (phosphorus compounds) and volatiles of various origins and types. In refining oils for soapmaking purposes it is customary to employ essentially the same equipment and processes which are used in refining for edible uses. The impurities

which are deleterious to edible oils are the same ones which give rise to undesirable properties in finished soaps. Even very small percentages of nitrogenous materials, and phosphorus compounds will unfavorably affect the keeping qualities of soap, will mask perfume and, in combination with perfumes or fixatives, may definitely hasten the onset of rancidity.

Upon first consideration, it would not appear necessary nor desirable to remove free fatty acids from oils which are to be used for soap manufacture. Experience has shown, on the other hand, that soap prepared from neutral oils has, in many instances, much better keeping qualities than that made from oils containing quantities of natural free fatty acids.

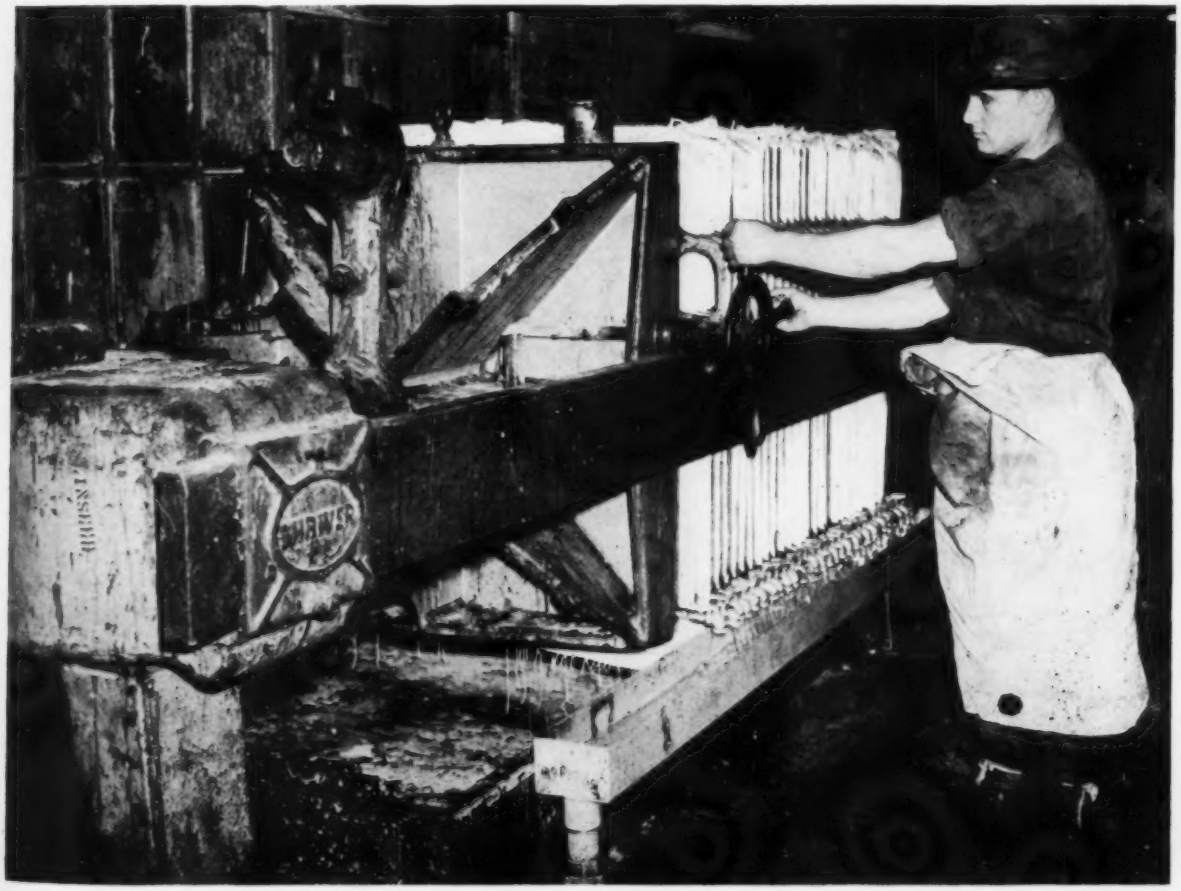
The reasons for this fact and the exact role played therein by the natural free fatty acids is somewhat obscure. The usual method of removing free fatty acid (neutralization with weak alkali solution) has always had the simultaneous effect of exerting chemical change upon the albuminoids and phosphatides. It has been shown to be a fact that the natural free fatty acids found in an oil or fat are generally of lower average molecular weight than those of the same oil or fat as a whole. It is possible that the removal of these lower molecular weight acids will enhance the keeping qualities of the final soap product, in addition to permitting the production of a firmer bar, as is well known.

TABLE III
Comparison of Characteristics of Palm, Palm Kernel and Coconut Oils

	Specific Gravity	*Saponification Value Average*	*Iodine Value (Wijs)*	*Titer Test*	*Reichert-Meissl Value*
Palm Oil	0.923 at 15°C.	202	53.5-56.0%	42.7-44.5°	0.9-1.1
Palm Kernel Oil	0.920 at 40°C.	248	13.0-15.0%	22.5-25.5°	5.4-6.0
Coconut Oil	0.926 at 15°C.	260	8.5- 9.0%	23.5-25.0°	6.6-7.0

Oil refining equipment in the soap factory is simple in design and in operation. The neutralizing vessel is a cone-bottom steel tank, similar in design to the cylindrical soap kettle, but equipped with considerable surface of closed steam heating coils, for quick heating of contents, with mechanical stirring apparatus and with swinging discharge pipe for decantation of the neutral oil. Auxiliaries include a sup-

Photo Courtesy Woburn Degreasing Co.



Fatty acid purity means clarity and absence of foreign matter. View of the filtering operation in the plant of a leading manufacturer of fatty acids.

ply tank with a measuring gauge for the neutralizing solution and a receiving vessel with closed steam coil for the by-product (neutralized free fatty acids, neutral oil, coloring matter, albuminoids and phosphatides).

For further color improvement of neutralized oil or fat, bleaching with adsorbents such as fuller's earth or activated carbon, or both, is employed. The bleaching vessel is similar in design to the neutralizer, but is equipped in addition with an oil-circulating pump and a filter press for removal of the bleaching materials.

When palm oil is to be bleached, this step is often performed without previous neutralization of the oil. The coloring matter of palm oil is more susceptible to an oxidation bleach than to removal by adsorbents, therefore usual methods of bleaching this oil involve the use of an oxidizing agent such as bichromate of potash, or blowing of the oil with a current of air for a period of time at elevated temperature. The treatment is performed in a vessel similar to the standard bleaching vessel, but equipped with a suitable hood and vent for removal of the effluent heated air.

The soapmaker who has had the foresight to provide his plant with the foregoing simple refining and bleaching apparatus is in position today to substitute available products for those, such as coconut oil, which are disappearing from the markets. Lower grade tallows and greases which are softer than the high grade white or "edible" tallow, can be refined and bleached and used in suitable blends with bleached palm oil and pale rosin to produce a formula base which will provide at least a working substitute for the previous high-grade tallow-coconut oil combination. The addition of even small quantities of palm kernel or babassu oil should improve the lathering qualities.

Hydrolysis Equipment

REGULATIONS recently promulgated by the War Production Board prohibit the use of fats containing lauric acid (coconut, palm kernel, babassu) in soaps or other products unless such use is accompanied by recovery of the glycerine contained in the fats.

This ruling will suspend entirely the use of these fats as such in cold-made soaps, half-boiled soaps, potash soaps or shaving creams. Makers of all such products must find new raw materials or must separate the glycerine from the fats and produce their soap products from the resultant fatty acids. There are two generally used methods of hydrolysis of fats for production of fatty acids and glycerine, the autoclave method and the Twitchell Process.

For the autoclave method of hydrolysis, the primary equipment consists of a pressure vessel, the hydrolysis of the fat being accomplished by the action of steam under pressure. To accomplish the desired result at moderate pressures, a catalyst is employed, lime or zinc oxide being the usual catalysts. The use of the catalyst can be dispensed with entirely if the pressure employed is relatively high, 200 to 300 p.s.i.

Early types of autoclaves were built of copper and were often heated by direct fire or were connected to nearby small high-pressure boilers. More modern plants utilize nickel or stainless steel materials for autoclave construction and derive the needed pressure from main plant boilers of high-pressure characteristics or by the use of steam boosters or compressors. Auxiliary equipment for an autoclave hydrolysis plant includes vessels for preliminary washing of the fats and for separation of the emulsion of fatty acids and glycerine sweet-waters after hydrolysis.

The Twitchell Process of fat hydrolysis is named for its inventor, the late Ernest Twitchell of Cincinnati. Dr. Twitchell, one of the leaders of the late nineteenth century in the chemistry and technology of fats, oils and soaps, discovered that hydrolysis of fats with water could be accomplished at atmospheric pressure and at relatively low temperatures through the catalytic action of napthenic acid—oleic acid sulfonates. This discovery permits the fat hydrolysis to be performed in open vessels of wood, lead or other non-corrosive metal and eliminates the requirement of high pressure steam. The resultant products of fatty acids and glycerine water (sweet-water) are substantially the same as those derived from the autoclave process.

There has been much controversy over the relative merits and disadvantages of the Twitchell and the autoclave fat hydrolysis processes. From an extended experience with both, it may be asserted here that the original investment for the Twitchell procedure (therefore also the fixed costs) is considerably lower, the operating costs somewhat higher, the quality of fatty acids equivalent in all properties except that of color, which is only slightly inferior, the glycerine recovery somewhat lower for equivalent hydrolysis and the crude glycerine quality considerably lower, than in the autoclave method. It can be readily appreciated that the soapmaker whose plant is equipped with autoclave or Twitchell hydrolysis equipment is in a preferred position under today's conditions, particularly if he produces cold-made soaps, potash soaps, liquid soaps or similar specialties.

Distillation Equipment

CLEANLINESS and light color are, to the maker of fine soap, prime essentials in his kettle stocks. Use of hydrolysis methods assures him of a larger yield of glycerine of better quality than that obtained by kettle saponification. Neutralization of fatty acids in the soap kettle, instead of saponification of neutral fat, greatly simplifies kettle operations, eliminating many salting out and washing "changes."

The color impairment incident to both the Twitchell and autoclave hydrolysis processes, however, limits the usefulness to the soapmaker of either of those methods, for in using them he must carefully select his primary raw materials, bearing in mind the quality and color of his finished soap products.

The soap manufacturer whose plant equipment includes a modern fatty acid distillation plant is measurably better prepared to maintain the quality of his soaps in the face of raw material difficulties than are his competitors who are not so equipped. It is

(*Turn to Page 73*)

SINCE the issuance of General Preference Order M-60 on March 20th, manufacturers of liquid hand soaps and liquid soap shampoos have been experimenting with methods of making these products without coconut oil. Far-sighted manufacturers, who could see that laws requiring the recovery of glycerine were on the way, began their experiments months before the order was brought out and were quite prepared to change their operations by June 1st. But even though the prohibition against leaving more than 1.5 per cent of available glycerol derived from high lauric acid oils became fully effective on that date, some liquid soap makers found themselves still in the experimental stage. Each manufacturer was forced more or less to work out the problem himself—but in every case fatty acids have been found to provide the most satisfactory, if not the only answer.

It is generally agreed throughout the trade that distilled fatty acids are the next best thing to coconut oil for the manufacture of liquid hand soaps and soap shampoos. There are no serious technical problems involved in changing over from coconut oil to fatty acids,—the trick is to make a finished product which will possess approximately the qualities of the products previously made from straight vegetable oils. Any soap maker can take the same equipment he used when coconut oil was obtainable and make a good potash soap from fatty acids—provided he can get the materials he needs. The problem is not so simple, however, when shortages take away the very substitutes for coconut oil he needs most urgently.

Coconut oil and the other high lauric acid vegetable oils are now eliminated as liquid soap raw materials; coconut oil fatty acid and lauric acid are almost completely off the market. What then can the potash soap maker use after these materials are no longer available and his stocks are depleted?

Fortunately answers to this question are being developed daily. Fatty acid manufacturers have been active in producing materials which can be utilized. Yet a great deal of experimental work is still needed to determine which fatty acids, fatty acid blends, or mixtures of fatty acids and whole oils, can be used to best advantage. The incompleteness of technical data on the behavior of fatty acids in soap making and the almost complete absence of information on the new blends of fatty acids now being offered makes experimentation by trial and error a necessity on the part of soap makers. In certain cases it is impossible to predict what effect a small change in a formula will have on a final characteristic, such as stability of the finished product. But information is being amassed and ultimately, no doubt, results more satisfactory than those attained at present will be achieved.

Of all the single fatty acids now available, myristic acid probably offers more possibilities to the potash soaper as a coconut oil substitute than any other. It is closely related chemically to the now virtually unobtainable lauric acid and is said to be highly satisfactory in combination with other

materials for the manufacture of liquid hand soaps. Although the supply situation on myristic acid seems fairly good at present, it cannot be assumed that there will always be plenty available. The myristic acid now on the market is derived from a South American raw material which has never been produced in large quantities. Naturally, the supply is not limitless.

For the time being, however, myristic acid is able effectively to fill the breach resulting from the loss of coconut oil as a liquid soap ingredient. It can be used with lauric acid or coconut oil fatty acid, where such materials are still on hand, to make stocks last longer; and it can be used with or without the addition of a percentage of a bland neutral domestic oil or fatty acids of domestic oils. The combinations and blends which can be used are literally infinite.

Numerous coconut oil fatty acid substitutes are being offered currently by manufacturers of fatty acids, and these in addition to myristic acid give the potash soaper a fairly wide choice of lather producing constituents. One of the recently developed fatty acid blends is said to give lathering characteristics to the soap made from it equal to 80 to 85 per cent of that of straight coconut oil soap. This particular product is said to be available in tank car quantities and, from the point of view of one manufacturer of liquid soaps, may eventually replace coconut oil even after the war is over and coconut oil is again plentiful.

TURNING to the actual process of manufacturing liquid soaps from straight fatty acids, there are several differences in the operation as contrasted with the process when only whole oils are used. The principal difference is that saponification with fatty acids takes place very rapidly. Fatty acids are chemically simpler and more reactive than their corresponding glycerides. Consequently a somewhat different technique in saponification is required. If the caustic is just run into a fatty acid or a mixture of fatty acids, the reaction of neutralization may take place so rapidly that the charge will surge up out of the kettle and "walk down the stairs." In order to prevent too energetic a reaction, it has been found advisable to add the melted fatty acids gradually to the caustic potash solution and at the same time agitate the mixture violently to prevent bunching and lumping. The rate at which the fatty acid is run into the kettle is determined by trial, the material being run in as rapidly as the agitators can handle it. The concentrated soap solution is then diluted to the proper concentration, allowed to age, and filtered to make it clear.

Prior to saponification the fatty acids should be heated only enough to melt them, and no longer than necessary, since prolonged heating and excessively high temperatures tend to darken them and the soaps made from them. Fatty acids also become contaminated and discolored after long contact with iron, particularly at high temperatures. Thus they should be stored in tanks made of aluminum, stainless steel, or glass, or in iron tanks having a protective coating.

The speed of saponification is a decided advantage, for much less time is required at the soap kettle, and corrections for alkalinity may be made with less loss of time than when using natural whole oils, which take up small amounts of excess alkali over a period of days. The speed of saponification naturally varies according to which fatty acids are used. With some fatty acids the reaction is completed almost instantaneously, while with others a few minutes or hours are required. The capacity of a soap maker's equipment is upped considerably when fatty acids are used.

Since soaps made from straight fatty acids normally have no glycerine content, they have a tendency to dry out in use and to clog up the mechanism of soap dispensers where the soap solution is exposed to air. Glycerine is present in a 40 per cent liquid coconut oil soap, for example, to the extent of about 6 or 7 per cent and, due to the hygroscopic nature of glycerine, this helps prevent the soap from drying. Fatty acid soaps, on the other hand, become hard and brittle after a relatively short exposure to the air. It is suggested that other materials beside glycerine have hygroscopic properties and possibly could be used in a liquid soap, to prevent excessively rapid drying.

The tendency of straight fatty acid soaps to darken upon standing in drums or cans is another disadvantage which has been charged against them. This may be due to the fact that certain natural inhibitors present in the whole oils from which the fatty acids are derived have been removed in the process of splitting and distilling. Glycerine is said to act as a preservative, incidentally. Further work on this subject may bring forth inhibitors, able to prevent darkening, which can be added to the fatty acid soap.

Fatty acids are high in price, even under present ceilings, in comparison with the corresponding natural oils. This is offset to some extent, however, by the higher yield of soap when fatty acids are used (about 5 per cent higher), and by the lower costs resulting from faster production and more rapid equipment turnover.

In order to remove or at least ameliorate these various disadvantages of straight fatty acid soaps, some liquid soap manufacturers have found it advisable to mix the fatty acids with mild neutral domestic vegetable oils before saponification. Soybean oil, corn oil, castor oil and peanut oil, have been used for this purpose. The addition of natural oils introduces a small amount of glycerine into the final product and eliminates the drying effect. It also diminishes the tendency to darken upon standing and lowers the average cost of materials. However, in correcting one set of disadvantages others are sometimes introduced, and this is true in this case. Soaps made from a blend of fatty acids and whole domestic vegetable oils have a tendency to thicken and gum after standing for a period, due to the presence of gelatinous constituents of the vegetable oils. In a liquid soap, this results in slowing of the filtering operation. The filter press used in clarifying the soap becomes clogged after a short time and must be taken down every couple of days or so to be cleaned. As the cleaning may take three or four hours to complete, that much time is lost in addition to

the extra time required for filtering through a partially clogged filter press.

Some manufacturers have found it impractical to filter a soap made from a fatty acid-whole oil blend and have side-stepped the operation by clarifying in other ways.

When preparing liquid soap formulations using fatty acid-vegetable oil blends, it is important to remember that restrictions will probably be placed on the glycerol content of the final product in the near future. Advance information on forthcoming War Production Board orders indicates that the glycerol content of the finished potash soap will be limited to 2.75 per cent on the anhydrous soap basis. This means that not much more than 20 per cent domestic oil can be used in any formulation for liquid soap, the remainder of the fat charge being fatty acids. The above statement should not be regarded as official, however, as at the present writing the WPB orders have not yet been issued.

IN a liquid scrub soap, the lathering properties are not nearly as important as they are in liquid hand soaps and liquid soap shampoos. Thus scrub soaps can be made without use of materials which give free lathering characteristics. But in liquid hand soaps and soap shampoos, good lathering qualities are usually demanded by purchasers who regard lathering as a measure of quality.

There are other materials beside coconut oil and lauric acid which give good lathering characteristics to liquid soaps. When fatty acids other than lauric or myristic are used, lathering or foaming ingredients can be added to give the final product the lathering qualities the American public has come to demand as a sign of good soap. (Of course, it is by no means a scientific fact that a soap which lathers voluminously is necessarily a better cleanser than one which lathers hardly at all.)

Lathering ingredients, or products which can be used for this purpose, are numerous and varied. Among the huge number of wetting agents now on the market are many which can give foaming action to a soap, and most of them are available in any desired quantity. The liquid soap manufacturer would do well to obtain a number of these for experimentation against the day when stocks of coconut oil fatty acid, lauric acid, myristic acid and coconut oil substitutes may no longer be available. No one knows when that day will arrive. And no one knows how long it will be, once lauric acid type oils and fatty acids are completely off the market, before they come back. Perhaps this will not be before the war is over.

Among the wetting agents which might prove useful in liquid soaps are the sulfonated castor oils and the sulfonated mineral oils. When sulfonated castor oil is used, it can be added to the kettle charge to the extent of 4 to 5 per cent immediately after saponification or neutralization is completed. Sulfonated castor oil tends to clear up the resultant solution, making refrigeration and subsequent filtering unnecessary. The solution after saponification should be slightly alkaline, but in case there is any free fatty acid present at the conclusion of the reaction, the addition of the sulfonated castor oil eliminates cloudiness due to the presence of free fatty acids.

Soaps made from fatty acids other than lauric acid or coconut oil fatty acid are somewhat less soluble in water than coconut oil potash soaps. Thus it is not possible to make solutions as concentrated when other fatty acids are used. Where a shampoo is being made, for example, it may not be possible to produce a clear 40 per cent solution, and the concentration may have to be cut to 30 or even 20 per cent. In order to disguise the fact that the concentration is lower than that to which the customer is accustomed, a certain amount of soda may be added to the potash lye used in saponification. The small percentage of soda soap in the product gives greater body to the liquid soap.

Liquid soaps of these types will not lather as freely as pure coconut oil soaps, but experimentation with foaming agents of various types should develop formulations which lather satisfactorily. In any event, the public becomes accustomed to privations during war time and certainly should not consider it a hardship if soaps do not lather as profusely or as rapidly as they did several months ago.

THE transition from vegetable oil potash soap to soaps made principally from fatty acids should be a relatively easy problem for the producer of liquid soaps. His experience and ingenuity in using the available materials will determine whether his finished product will be inferior, equal to, or superior to the soaps he made previously. With the improvements in fatty acids that have been made already, and those that are expected to be developed in the future, it is probable that fatty acid soaps will improve in quality as time goes on.

After potash soapers have worked with fatty acids for a long enough time to become accustomed to them, they may find that the advantages more than offset the disadvantages attending their use. This is the opinion of a number of large liquid soap manufacturers who predict that fatty acids will continue to be used for the manufacture of hand soaps and shampoos after the war is ended. After the first World War, many of the substitute processes and materials which came into use during the war were retained. And it is probable that history will repeat itself.

Even more important than the technical problems in changing over from pure vegetable oils to fatty acids, in opinions of some potash soapers, is the labor problem likely to result from the war situation. Soap makers who are not glycerine producers cannot be considered essential to the war program, and as such may have a large portion of their personnel drafted into essential industries.

For this reason, some manufacturers of liquid soaps are contemplating splitting their own fatty acids instead of buying them through the usual channels. Not many of the several hundred liquid soap producers in the United States are equipped to make fatty acids, but those who are so equipped or who are able to convert some of their equipment for fat splitting are giving serious consideration to the idea.

SADDLE SOAPS

By Paul I. Smith
LONDON

Photo Courtesy Federal Security Administration

THE demand for saddle soap has increased very considerably since the outbreak of war, owing to the needs of the army for a reliable cleaning agent for all types of leather equipment, particularly saddlery and harness (in spite of increased mechanization, horses are still being used), Sam Browne belts, sword frogs, leather pistol holsters and ammunition pouches, etc., the latter items being used exclusively by officers. It is sometimes thought that with the introduction of strong webbing equipment, leather has been eclipsed in usefulness and popularity. This is true to a degree, but leather items of equipment still make a most impressive total and their cleaning and preservation requires a good deal of consideration.

Before attempting to describe the production of saddle soaps, it is of interest to summarize concisely the main requirements of a saddle soap:—

(1) It must possess a mild but effective scouring action on the leather, i.e., ability to remove dirt, grease, surface dressings, perspiration, etc.

(2) It must possess lubricant and nourishing properties, i.e., ability to leave the leather smooth and silky to the touch and in a fit condition to take a high polish when application of a suitable polish is made.

(3) It must possess good keeping properties.

Paste or bar—that is often a query difficult for the manufacturer to answer for himself. In Great Britain paste saddle soaps of about the same consistency as boot polish are more popular than the bar type because they are in a condition ready for immediate use by unskilled or, at the best, only semi-skilled labor.

It should be remembered that there is no golden recipe for saddle soap and what suits one country is unsalable in another, however, the general principles are the same in all cases.

The use of saddle soap goes back well over 200 years, but the soap used by the saddlers of the 18th century differs markedly from that employed today. One old record, now destroyed in the blitz on London, describes the production of a saddle soap consisting of a mixture of good sweet tallow soap and urine. (Why the tallow soap should be sweet is somewhat difficult to follow.) Incidentally urine was commonly used by tanners for scouring or cleansing russet or undyed leather and proved its undoubted value for centuries.

It was a fairly common practice at one time for saddlers to mix a little old tanning liquor with the soap, the idea being that this nourished the leather and made good any loss of tannin due to the scouring action of the soap. One recipe given in a book published at the beginning of the present century includes tannic acid amongst its ingredients.

Instructions say: Melt the soap and palm oil together and add with

constant stirring the tannic acid previously dissolved in the water. Pack in stoneware or china pots.

Palm oil	28	lbs.
Yellow soap	84	lbs.
Ammonia soap	112	lbs.
Tannic acid	3½	lbs.
Water	3½	gals.

For cleaning harness and saddlery some of the best known London brewers used a mixture of soft soap, resin and a little wood ashes. The method adopted consisted of first brushing the leather with a stiff brush, using warm, but not hot water, and a little of the soap mixture. After washing well, the leather was wiped with an old cloth and before drying out completely rubbed over with pure neatsfoot oil and then allowed to dry out in the shade. The harness was then usually treated with a special harness composition and polished with a clean dry brush.

During the last 50 years saddle soaps have, in the main, been palm oils soaps containing various ingredients such as, glycerine, talc, rosin, beeswax, ceresine wax, turpentine, etc. The consistency varies from a paste to a bar of ordinary hard soap. So-called Russian saddle soap, quite well known in Europe before 1914, was made with a mixture of palm oil, tallow and pale rosin. One recipe for this is as follows:

	Parts
Beef tallow	48
Unbleached palm oil	40
Pale rosin	10
Caustic soda lye (strong)	2

(Strength of the soda lye is not given.)

Brant in his "Soap Makers Hand Book" published in 1912, gives a recipe of considerable interest as, if slightly modified, it can produce a very good saddle soap.

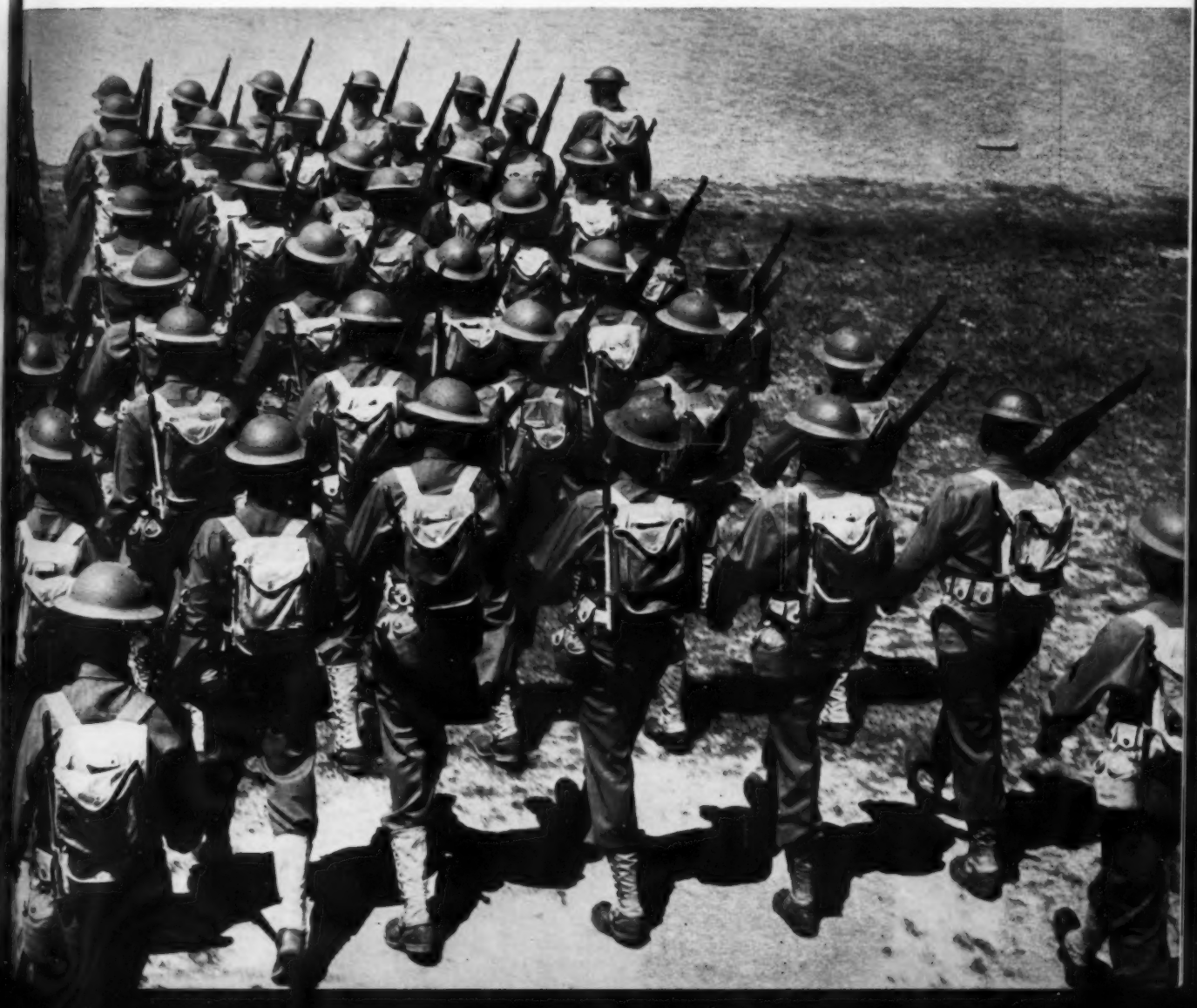
Ten parts tallow; 5 parts crude palm oil and 3½ parts pale rosin are boiled to grain. The spent lye is then removed and about 7 parts of caustic soda lye of 27° Be. are added and next successively about 7 parts palm kernel oil to cut the strength of the lye. The soap is then boiled thick, fitted so that when tasted it shows a biting sensation on the tongue and by the addition of brine of 20° Be. is brought so far as to be sufficiently fluid.

One soapmaker in Great Britain makes an excellent saddle soap with a mixture of 12 parts bleached palm oil; 3 parts cotton oil and 2 parts rosin saponified with 38° Be. caustic lye. A small amount of Turkey Red oil is incorporated in the product and this assists its wetting properties. In the writer's opinion there does not appear to be any reason why a straight palm oil should not be used, but it is desirable that it should contain definite emollient properties, therefore glycerine must be added or the cold process saponification adopted.

A commercially useful saddle soap can be made by merely crutching into a good olive oil soft soap a mix-

(*Turn to Page* 73)

Photo Courtesy Federal Security Administration



Action of SOAP *on the* SKIN

A STUDY of the general problem of cleansing of the skin, including such allied topics as structure of the skin, types of soil, method of operation of the various detergents, and the action of these detergents on the skin, has just been completed by Drs. C. Guy Lane and Irvin H. Blank of the Harvard Medical School, and published under the auspices of the Committee on Cosmetics of the American Medical Association. Original publication was in the March 7, 1942, issue of the *Journal of the American Medical Association*, Vol. 118, pp. 804-817. By permission of the latter journal and the authors, the general summary of the report of Drs. Lane and Blank is reproduced.

"It is readily apparent, from this review, that many points concerning the mechanism of the removal of soil from the surface of the skin by detergents and the action of these detergents on the skin itself are still controversial, but an attempt has been made to indicate the most satisfactory explanations, in our opinion, at the present time. Some of these points seem to us to deserve further emphasis.

"Although water is used for removing the soil from the skin a major part of the time, the soil to be removed is mostly insoluble or oil soluble but not water soluble. The insoluble soil probably seldom gets into actual contact with the epidermal cells of the normal skin because of the more or less continuous film of oily sebaceous material on the surface of the skin. Of the detergents added to water to remove this soil, soap is the most commonly used. Cleansing with soap and water probably removes the insoluble soil by emulsification, not saponification, of the oily film which separates the insoluble soil from the skin proper.

"Micro-organisms may be thought of as a type of insoluble soil and mechanical removal of these organisms, by the action just described, plays a greater role in skin sterilization by scrubbing than does the actual bactericidal action of the detergent which is used.

"It has been stated that the skins of some people are irritated as a result of contact with detergents. At times this may be only a dryness resulting from the removal of the oil-soluble, endogenous soil which has served as a lubricant. If a more severe irritation occurs and the detergent employed has been soap, the types of fatty acids in the soap and the degree and duration of the alkalization of the

cutaneous surface caused by its use are factors which play some part in producing this irritation. The low molecular weight, saturated fatty acids, present in large amounts in coconut and palm kernel oils, are more irritating than the high molecular weight acids. Each of the fatty acids commonly found in soaps becomes more irritating in the presence of alkali. A factor which should be important in determining whether or not an individual will be irritated by a detergent is the ease with which that detergent will penetrate at least the stratum corneum of the skin. This factor has as yet received but little attention in the study of irritations due to detergents.

"The sodium salts of the saturated fatty acids, which have a molecular weight equivalent to or less than myristic acid, are relatively irritating. These salts may constitute as much as one-fourth of the actual soap in an average American made toilet soap.

"Laundry soaps are usually considered to be more irritating than toilet soaps. There are two apparent reasons for this. The laundry soaps contain larger amounts of builders with the result that the total available alkali is greater, though the actual pH may be little or no higher than the pH of toilet soaps. Of more importance, however, is the fact that laundry soaps are invariably used for longer periods of time with a resulting alkalization of the cutaneous surface for a long time. It is probable that many people who show an irritation of the skin from the use of laundry soap would likewise be irritated by toilet soap should they use it for as long a time as they use laundry soap.

"Superfatting of soaps does not reduce the alkalinity of soaps and little, if any, of the superfatting material is left on the skin after washing. It is difficult to perform satisfactorily both the cleansing and the lubrication of the skin in the same operation.

"Although triethanolamine soaps are less alkaline than similar soaps of inorganic alkalis, regular patch tests have not indicated that they are less irritating to the skin. The penetration factor that has been mentioned may be important in this reaction.

"The technic of making patch tests with soap has varied greatly. No standard technic has been agreed on, and it may be difficult to work out a technic which will satisfy all investigators and provide for the proper interpretation when all factors are considered. The concentration of the solution used and the amount applied have varied. Neither the patch test site nor its area has been constant. The duration of the test has varied. Thus the degree of alkalization per unit area is not controlled. Nor is the time of alkalization controlled, since the skin has the ability to neutralize externally applied alkali and the rate of this neutralization is not a constant factor.

"Soap patch tests seldom show vesicular reactions. When reactions to patch tests which are not vesicular are being interpreted, it is important that the patch test technic duplicate as closely as possible the actual clinical contact with the material in question. Regular soap patch tests do not duplicate clinical contact with soap and must therefore be considered of questionable value in diagnosing dermatitides which are thought to result from the use of soap.

"Since vesicular reactions to soap patch tests are seldom seen, the suspicion at once arises that dermatitides from soap are not allergic contact dermatitides. Since, however, a relatively few people have a dermatitis from soap, and since those who do have acquired it after previous contact with soap, these dermatitides can be called acquired hypersensitivities. They fail to meet the requirements of an allergic contact dermatitis only in that they have not yet been shown to be specific for any one substance.

"The actual pathogenesis of a dermatitis from soap is not yet known. Though both the alkali and the fatty acid fraction play some role in producing a dermatitis, the mechanism is probably not that of a simple chemical reaction between either substance and the skin. Penetration of at least the stratum corneum may be important, as may also some alteration in the physiology of the skin, though nothing specific is yet known of either of these factors. The final classification of a dermatitis from soap must await a better understanding of its pathogenesis.

"In many dermatoses which are not initially caused by the use of soap, its continued use may nevertheless aggravate or prolong the duration of the disease. A further complicating factor is the irritation which at times is produced by certain types of therapy. Frequently when a patient with a dermatitis presents himself to the physician it is difficult to decide the relative importance of the initial disease and the part played in producing the dermatitis by the previous therapy and by the removal of ointments by various detergent methods. An atopic dermatitis for instance, may be complicated by the use of an ointment containing tar and by the excessive amount of soap and water used to remove the ointment stains.

"Cleansing agents, such as strongly alkaline soaps, oils and oil solvents, are an important factor in the causation of occupational dermatitis. About one-third of all dermatitis caused by work occurs in those occupations in which the workman's skin is in frequent contact with soap or other alkaline materials,[83] and, in addition, many housewives are not included in any compilation of cases. Studies have been made by various single industries to determine the part played by soap in causing the occupational dermatoses of that industry. In some industries, even though it may not be necessary for the workmen to come in contact with soap or other detergents frequently, nevertheless the dermatitis may be caused, or at least accentuated, by the detergent rather than by any substance used by the workman while carrying out his duties. The Committee on Healthful Working Conditions,[84] Schwartz and Tulipan[85] and Klauder, Gross and Brown[14] have recently discussed the cleansing process in relation to industrial dermatitis and have recommended methods for preventing such dermatitis from occurring as a result of improper cleansing technics. More and more attempts are being made by industrial management to establish cleansing methods which will not irritate the skin of the workmen.

(*Turn to Page 74*)

New Products and

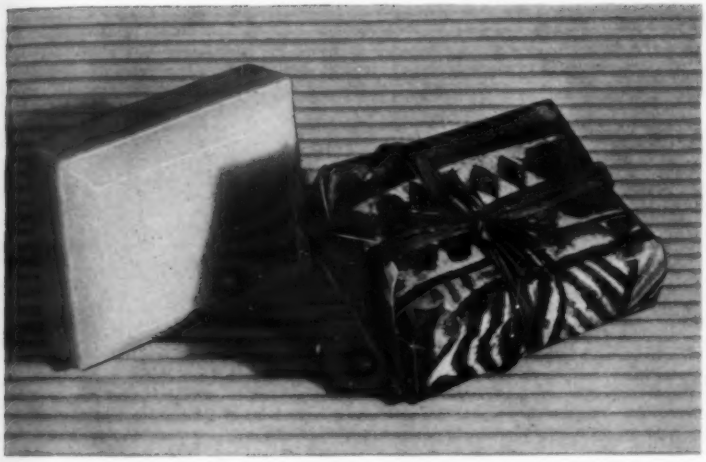
Bourjois has just brought out a new toilet and bath soap—"Evening in Paris." Modern in design, it is packed in three sizes—six, four and two cakes to the box, with each of the boxes retailing at $1.00.

Chicago Sanitary Products Co. has just brought out a new mechanic's hand soap to claim its share in this war-booming soap specialty field. The container, by American Can Company, is of the usual shaker-top variety.

Daggett & Ramsdell, New York, have just added a new soap to their "Mountain Heather" line. The tablets feature a chubby design—and are molded to fit the palm. Box of three retails at $1.00.

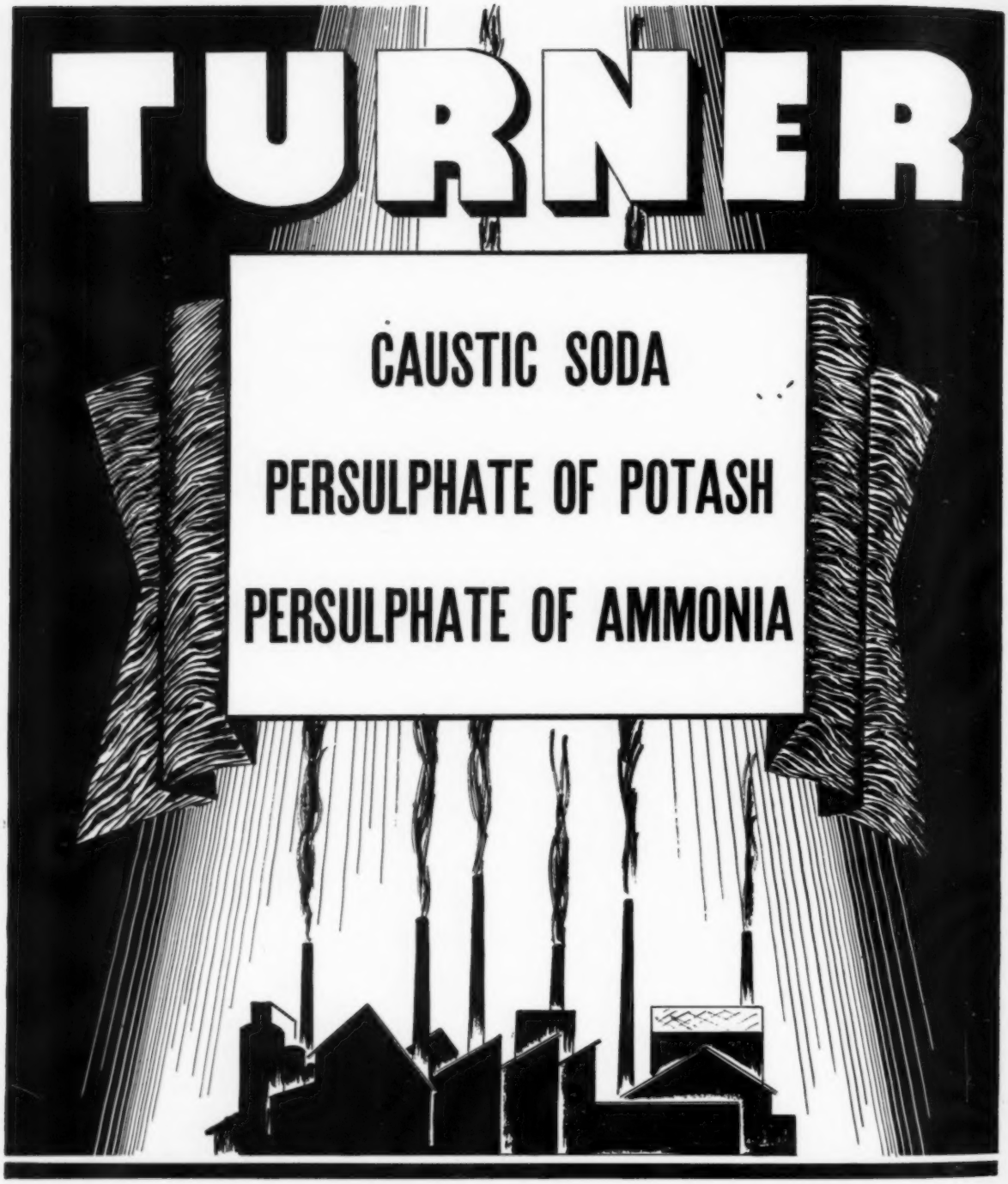
Packages

Luxor, Ltd., Chicago, has recently added six additional odors to its "American Beauty Savon Sachet" line. One of the new odors is Pine, package design featuring the usual pine cone motif. Carton by W. C. Ritchie. Bottle by Carr-Lowery.



From the beach at Waikiki—or thereabouts—comes this toilet soap cake of Hawaiian manufacture. It is attractively cased in a wrapper suggestive of the Hawaiian Islands, and bound with grass string.

Chemical Manufacturing Co., Easton, Pa., has recently brought out a scouring cleanser packaged in a shaker-top can. Name of the product, "Target," is a prominent feature of the package design.



JOSEPH TURNER & COMPANY

RIDGEFIELD, NEW JERSEY

83 Exchange Place, Providence

40th St. and Calumet Ave., Chicago

NEWS....

Mem, Inc., Expands

Mem, Inc., soaps and toilet preparations, which has maintained headquarters at 215 E. 22nd St., New York, since the firm was established in the United States two years ago, recently took additional space at 212 E. 22nd St., where the entire lower floor is devoted to sample rooms and storage facilities.

Lauric Restrictions June 1

Soap makers who do not recover glycerin from their consumption of high lauric content soap oils were required to cease use of these oils completely on June 1. They had been permitted 50 per cent of their 1941 average consumption in April and May. An amendment to GPO M-60 was issued early in May, extending the period during which limited use of such oils would be allowed in certain edible products, but no such extension was given to soap makers.

Kiehl New Colgate Perfumer

Maurice A. Meunier, formerly perfumer for Colgate-Palmolive-Peet Co., Jersey City, N. J., has just been appointed perfumer for Les Parfums de Dana, Inc., New York. Mr. Meunier had been with the Colgate company since 1928. His position at Colgate has been filled by John Kiehl, who has been a perfumer in the company's research and development department since 1934. Before this time Mr. Kiehl had been with Compagnie Duval for eight years and later with P. R. Dreyer Inc. for two years.

Bath Size "Lux" Introduced

Lever Brothers Co., Cambridge, Mass., introduced its new bath size "Lux" soap in test campaigns conducted recently in Charlotte, N. C., Harrisburg, Pa., and South Bend, Ind.

Howells Becomes Beach Manager

Lloyd T. Howells, who has been closely associated with the detergent industry for the past 18 years, was

LLOYD T. HOWELLS

recently appointed general manager of Beach Soap Co., Lawrence, Mass. Mr. Howells is a graduate of the University of Buffalo. The Beach company, recently acquired by Gordon R. Fulton, president, has strengthened its development program on detergents for use in the textile industry.

Soap Assn. Aids Cotton Fund

The Association of American Soap & Glycerine Producers has made a substantial pledge of financial assistance to the promotional program of the cotton industry, it was announced at a recent meeting in Boston of the Domestic Consumption Section of the National Cotton Council. The cotton industry is raising a fund of several hundred thousand dollars to promote increased use of cotton fabrics as a war measure, and the soap industry has pledged to contribute one dollar for every three raised by other donations, the top limit on the soap industry's share being fixed at $100,000.

Restrict Soap Dispenser Mfr.

An order curtailing use of iron and steel in the manufacture of soap dispensers was issued early last month by the War Production Board. The order, which also affected some 400 other common civilian products, provided that use of metals in soap dispensers be reduced sharply for a 90-day period, and thereafter discontinued completely.

Fat Campaign To Break Soon

The campaign by domestic fat consumers to stimulate saving of waste household fats is expected to open shortly with a series of advertisements in newspapers, over the radio and in a selected group of magazines. Contributions from 118 soap and fatty acid manufacturers, totaling over half a million dollars, will help support the program which in the initial intensive stage will cover a period of 11 weeks. Posters and window stickers in cooperating butcher shops will urge the householder to save waste fats and turn them in to the butcher, with the idea of adding to the country's recoverable glycerin supply and at the same time providing added fat stocks for the soap maker.

Lusk Named C-P-P Vice Pres.

Robert E. Lusk has been named vice-president in charge of merchandising and advertising of Colgate-Palmolive-Peet Co. Mr. Lusk was formerly with the Ted Bates Advertising Agency. Robert E. Healy continues as advertising manager.

Nippert Heads Chi. Credit Assn.

G. H. Nippert of the Procter & Gamble Distributing Co., Chicago, was installed as new president of the Chicago Association of Credit Men at a luncheon May 7.

Soap Sales at New High

Sales of soap in the first quarter of 1942 set a new high record for the American soap industry, according to figures released last month by the Association of American Soap & Glycerine Producers. The total value was $107,756,295 which was 52.8 per cent above the total for the fourth quarter of 1941, 35.5 per cent above the 1941 first quarter, and 78.1 per cent more than the quarterly average for the five years, 1935 through 1939. Volume reports indicate that 898,665,201 pounds of soaps other than liquid were sold in the first quarter of 1942, this being an increase of 43.3 per cent over the fourth quarter of 1941, 9.4 per cent over the 1941 first quarter, and 42.6 per cent above the quarterly average for the 1935-1939 period.

Manufacturers of liquid soaps reported sales of 885,324 gallons, worth $831,797 in the first 1942 quarter. This was a gain of 7.2 per cent over the fourth quarter of 1941, 36.7 per cent over the first quarter of 1941, and 71.3 per cent above the quarterly average for the five-year period 1935-1939.

Unofficial estimates of preliminary second quarter totals indicate a sharp drop from first quarter shipments. Many manufacturers report that sales are currently very slow. Following five successive quarters of exceptionally heavy deliveries, this is not to be wondered at, as wholesalers, retailers and consumers are all reported to have excess stocks of soap on hand.

P & G Conclude Premium Deal

Procter & Gamble Co., conducted a "Spring Premium Sale" on behalf of "American Family" laundry bar soap and "American Family Speed Flakes," in Chicago last month. For ten days coupon requirements were cut up to 50 per cent on five premium offerings, including a dish towel, bath towel, bed sheet, silk hose and a kitchen knife set.

Moore Ungerer Treasurer

H. B. Moore who was recently named vice-president of Ungerer & Co., New York, has now taken on the additional duties of treasurer of the company. Norman E. Gallagher, formerly at the company's Philadelphia office, has been transferred to New York and Warren E. Kell is now handling the Philadelphia territory. Ralph Morgan has been named to cover the St. Louis district, with offices at 1123 Washington Ave., St. Louis.

Lever Honors Veteran Employees

Employees of Lever Brothers, Ltd., throughout Canada, who have completed long service records with the company were honored May 8 at a luncheon in Toronto tendered by the board of directors, with President G. A. S. Nairn acting as chairman. Eleven employees who had completed twenty years of service were cited, and nineteen who had completed fifteen years with the company were presented with gold watches.

Discontinue "Waterless" Claim

Jean Jordeau, Inc., South Orange, N. J., has signed an agreement with the U. S. Federal Trade Commission to cease advertising its shampoo as "waterless." Claims that the product eliminates dandruff or is an adequate preventive for colds will also be abandoned.

To Restrict Cosmetics

The cosmetics and toiletries field is being surveyed by the War Production Board, according to a statement issued May 20, with a view to restricting the industry to a more limited number of sizes and styles of products. There will be plenty of "all the cosmetics that are essential," according to the WPB, but overlapping products and unnecessary sizes are to be eliminated either by voluntary action of manufacturers or by government action.

Magnus Issues Cleaning Booklet

Magnus Chemical Co., Garwood, N. J., has issued a booklet on "The Care and Cleaning of Hands and Arms in the Industrial Plant." This discusses the increase in industrial dermatoses, considers the special cleaning problems imposed by many kinds of dirt and shows how the company's hand cleaner meets the required functions of a cleaner.

Court Says Soap Is Drug

Soap was classified as a drug last month by Magistrate Robert Levis in Bronx Municipal Term Court when he dismissed charges against three storekeepers who received summonses from police for selling soap on Sunday in violation of the Sabbath Day law. "External cleanliness which one gets through use of soap," he ruled, "is as important as the internal cleanliness derived from medicines." Soap is a drug only when it is sold by drug stores, the magistrate explained. If it is sold by a grocery store, it must be classified as a food, and such sales are a violation of the law.

P & G Comptroller Dies

William R. Huber, comptroller, Procter & Gamble Co., Cincinnati, died May 17, following a heart attack at his home in Wyoming, Ohio. He was 47 years old. He became associated with the company in 1920 in industrial engineering work. Mr. Huber was a Wyoming councilman in 1929-35 and had been active for many years in community chest, Red Cross and civilian defense work. He was president of the Wyoming Country Club, trustee of the Wyoming Presbyterian Church and a member of the Cincinnati Chapter of the Comptrollers' Institute. He is survived by his widow, three daughters, his mother and two sisters.

Soap Employment Gains

The index of employment in the soap industry, compiled monthly by the U. S. Department of Labor, moved up to 92.5 in March, 1942, from the February figure of 91.6. This compares with a March, 1941, level of 90.7. The payroll index also gained in March, 1942, being reported as 136.4 as compared with 135.1 in February, 1942, and 114.8 in March, 1941.

Soaps Burns 3 in Canada

Two men were seriously burned while a third received slight burns when a large kettle of soap boiled over on May 6 at the plant of Canada Linseed Oil Co., Toronto. The three men were trapped on a large platform when the boiling soap poured over them.

Soapers Confer with OPA

A SERIES of conferences between representative soap makers, soap wholesalers and retailers, and officials of the Office of Price Administration was held in Washington, May 7 and 8. The soap company officials constituted a group of 15, invited by OPA to consider problems affecting soaps arising under the price ceiling order which became effective May 11.

Soap makers pointed out that it has long been a general practice of the industry to base selling prices—not on the immediate oil and fat market—but on an average of prices over an extended period. In the present situation, they pointed out, this works a great hardship on them, and penalizes them unfairly, as soap selling prices in March —the ceiling month—had not yet reflected the higher level of oil and fat prices which were reached in the preceding months. A further problem is created by the fact that some manufacturers advanced prices in late February and early March, while others did not, producing an inequitable situation which also seriously affects the different wholesalers and retailers.

OPA officials stated that they were interested in having detailed figures to show the extent and effects of both these problems, and would welcome practical suggestions for alleviation of the burden, or to bring about its more equitable distribution. They stated very definitely, however, that no suggestions can be considered which would contemplate (a) allowing sales at retail at prices above the highest for each seller in March, or (b) reducing ceiling prices on fats and oils below those already in effect by OPA order, or (c) granting government subsidies. Subsidies, if any, are to be a last resort, to be considered only at a later date in those cases, probably entirely individual, where every other step has failed, including the cutting of all expenses to the bone, and where examination by the government shows that collapse or bankruptcy is imminent.

Also ruled out by OPA was any discussion (d) of problems of wages of labor or (e) of any change in the ceiling price of glycerine. In individual conferences, it was made clear that likewise ruled out are (f) changes in size or weight of soap bars or packages without corresponding changes in maximum price, or (g) changes in quality or soap content without corresponding changes in maximum price. Such changes, it was pointed out, would be tantamount to changes in price and must therefore be accompanied by corresponding changes in allowable price ceilings. It is recognized, of course, that changes in formula forced by the absence or shortage of materials due to the war or to official orders from war agencies such as the War Production Board, may be inescapable but in all such cases the quality of the soap sold at a given price must be as closely as possible in line with the previous quality of soap sold at that price in March. Deterioration in qualities arising from other than inescapable war conditions or government regulations, must be accompanied by a comparable decline in maximum price.

Detailed analyses of manufacturers' costs, prices and profit margins have been begun by OPA accountants, to be made in representative soap plants in all parts of the country. Detailed factual statements from manufacturers who are adversely affected by the price ceiling regulations (The General Maximum Price Regulation) may be addressed to the Chemical Branch, Office of Price Administration, Temporary Building S, Washington, D. C.

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Oil Chemists Elect Mitchell

H. S. Mitchell, Swift & Co., Chicago, was elected president of the American Oil Chemists' Society at the 33rd annual meeting held April 30 and May 1 at the Rice Hotel, Houston, Texas. Other officers of the society elected for the coming year are as follows: first vice-president, Lamar Kishlar, Ralston Purina Co., St. Louis; second vice-president, J. T. R. Andrews, Procter & Gamble Co., Ivorydale, Ohio; third vice-president, J. J. Ganucheau, Southern Cotton Oil Co., Gretna, La.; fourth vice-president, Foster D. Snell, Foster Dee Snell, Inc., New York; secretary-treasurer, J. C. P. Helm, New Orleans.

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Dr. Lenth with WPB

Dr. C. W. Lenth, formerly on the staff of the Association of American Soap and Glycerine Producers has just been given a leave of absence to set up a technical advisory section in the office of George B. Wrisley, head of the WPB soap and glycerine unit. Technical questions concerning manufacturing changes which must be made to adjust operations to conformance with present oil and fat restrictions should be addressed to Dr. Lenth.

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Shulton Granted Injunction

Shulton, Inc., New York, was recently granted an injunction against David Secon, trading as Circle Drugs, Philadelphia, restraining him from selling Shulton merchandise below the minimum fair trade price as established in Philadelphia by the toiletries company's fair trade contracts.

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New Quaker Chicago Plant

New and larger warehouse and blending plant facilities have just been established in Chicago by Quaker Chemical Products Corp., Conshohocken, Pa. R. L. Phillips is manager of the new plant which is located at 9343 Baltimore Ave.

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Brillo Earnings Off

Earnings of Brillo Manufacturing Co. for the first three months of 1942 were $88,465 as compared with $95,966 for the first quarter of 1941. This drop in earnings was noted in spite of the fact that orders and shipments were the highest for any quarter in the company's history.

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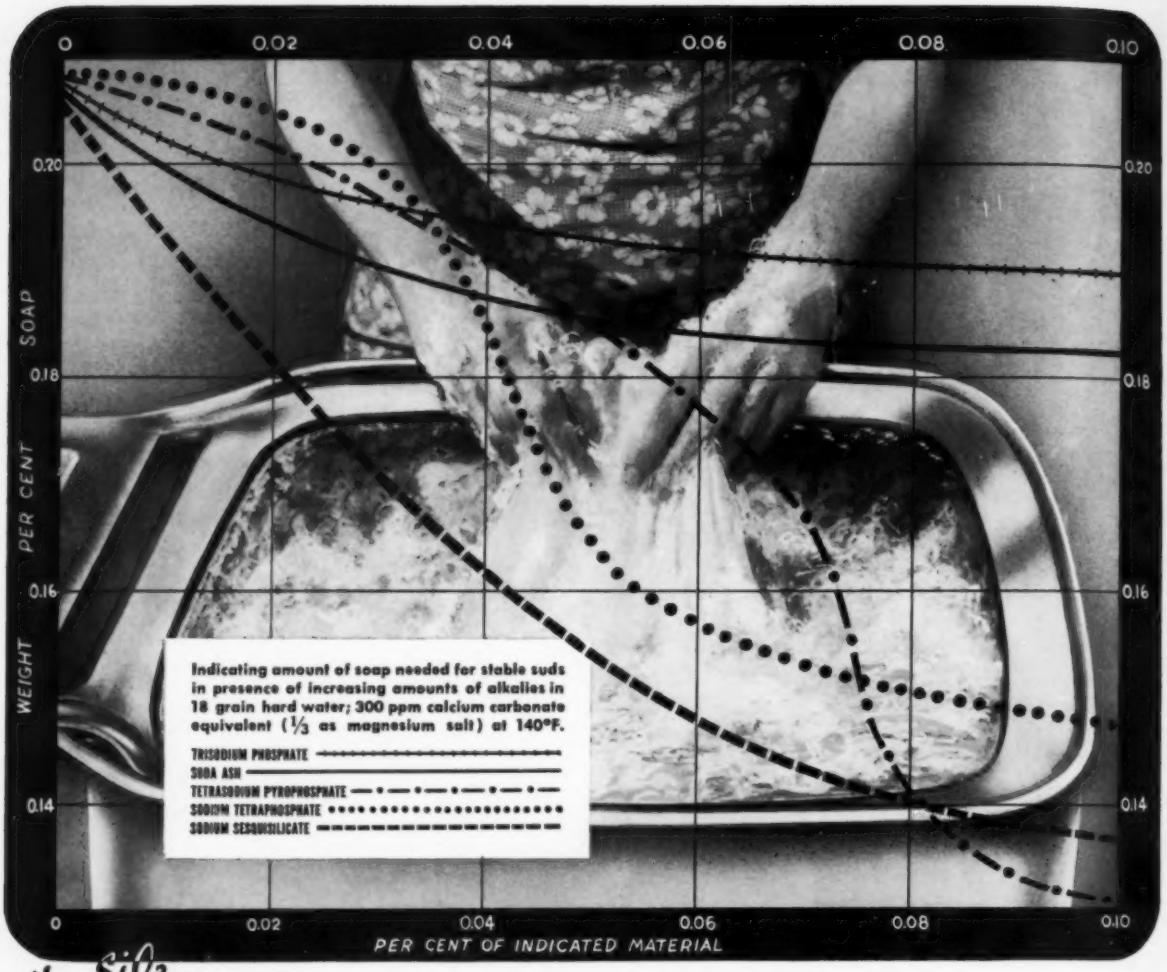
Washine Employees Buy Bonds

Washine-National-Sands, Inc., manufacturing chemists, Long Island City, N. Y., has just announced that 100 per cent of its employers and employees have signed up for the Volunteer Payroll Allotment Plan for the purchase of war bonds.



How SiO_2 Aids Cleaning—

PQ Silicates Improve Lathering

Here's the answer to your problem of how to formulate free-sudsing soaps for hard water areas at an economical cost. PQ Silicates, among the most effective ingredients for building soaps and detergents, are your able allies for rich, stable sudsing ability.

Above is a chart which you will find useful. It can be seen that the pure soap content can be reduced safely and yet provide ample suds by increasing the quantity of silicate. The soluble silica of PQ Silicates plays an important role in increasing sudsing.

Other charts showing different ratio silicates and temperatures are available. May we discuss PQ Silicate Builders for your soaps and cleansers?

PHILADELPHIA QUARTZ CO.

SILICATES OF SODA

125 S. THIRD STREET, PHILA., PA.

Cooper New Diamond Exec. V-P

George S. Cooper, former vice-president in charge of sales of Diamond Alkali Co., Pittsburgh, was elected

GEORGE S. COOPER

executive vice-president at a meeting of the board of directors held May 4. Mr. Cooper has been closely connected with Diamond Alkali either with the sales department of the company or with one of its associated firms since 1919. For the past five years he has been vice-president in charge of sales with offices in Pittsburgh where he will continue in his new position.

Bristol Leaves WPB

William M. Bristol, Jr., vice-president of Bristol-Myers Co., Hillside, N. J., who was called to Washington last Fall to help fit the health supplies industries into the war program, has just given up his position as chief of the health supply branch of the War Production Board to return to private life and activity in the Bristol-Myers company. It was reported that Mr. Bristol will convert some of the company's cosmetic plants over to war production.

"Clipper" Adds to Cleaner Line

Clipper Products Sales Co., Chicago, has announced a number of new "Clipper" cleaning compounds in paste form for use on automobiles. Included are special preparations for cleaning chrome parts, leatherette, wood and rubber. The latter is said to "revitalize" tires, make it easy to detect and remove tacks, glass, etc., and to fill up holes made by foreign substances in the castings. Clipper Products Co., was organized about a year ago, with Robert Murray as president. Other products manufactured include cleaning preparations for porcelain wares.

BIMS Battle for Bonds

BIMS of New York opened the 1942 golf season on May 14 at the Baltusrol Golf Club, Springfield, N. J. Under the direction of Martin Schultes of Hewitt Soap, BIMS chairman, 125 members and guests in the soap, cosmetic, drug, perfuming materials and allied trades battled over the Baltusrol fairways and rough, mostly rough. All prizes were in the form of war bonds and stamps instead of the usual prizes. When the shooting ended, Dudley Shaw of the Allen B. Wrisley Co. was declared the winner of the grand prize, a $50 bond. Other prize winners in order,—the prizes ranged from $2 in war stamps up to $25 bonds,—were Paul Dunkel of Paul Dunkel & Co. (low gross), P. L. Forsman of C. H. Forsman & Co., Harry Heister of George Lueders & Co., Ed A. Bush of Bush-Pan America, Inc., Fred W. Webster of Sagamore Metal Goods Co., J. J. Murphy, C. E. Clark of Whittaker, Clark & Daniels, Inc., Harris Whitaker of Bourjois, Inc., Milton Heymann of Grey Advertising Co., T. M. Hanlon of Caron Corp., W. Kyle Sheffield of New England Collapsible Tube Co., C. M. Macauley of Pro-phy-lac-tic Brush Co., Ivon Budd of Ungerer & Co., J. A. Leyden of Hampden Glazed Paper & Card Co., J. J. Reiner of Lehn & Fink, Inc., Paul E. Forsman of C. H. Forsman & Co., A. C. Burgund of Carr-Lowrey Glass Co., F. L. Kiernan of Kiernan-Hughes Co., F. J. Beyer of P. R. Dreyer Inc., Leonard H. Schultes of Hewitt Soap Co., H. G. Robinson of Whittaker, Clark & Daniels, Inc., I. P. Mac Nair of SOAP, C. C. Roth of Arrow Engraving Co., Paul Miller of International Cellucotton Products, and W. B. Smith of Affiliated Products.

Wrisley Employee Commissioned

Frank Hurst of the laboratory staff of Allen B. Wrisley Co., Chicago, has received a commission as 2nd lieutenant in the army, following completion of an officer's training course.

Colgate Heads Youth Group

S. Bayard Colgate, chairman of the board of Colgate-Palmolive-Peet Co., Jersey City, N. J., was in Chicago

S. BAYARD COLGATE

last month for a testimonial breakfast given to 1,000 business executives by the local organization of "Junior Achievement," of whose national Board of Directors he is chairman. Junior Achievement encourages boys of 16 to 21 years to establish enterprises for manufacture and sale of products they themselves make. Adult advisers skilled in finance, production and salesmanship, supervise the activities. "They learn to do by doing," Mr. Colgate explained, "and it is important for us to realize that they are the men who will some day take over our businesses and investments."

New Swift Soybean Plant

Swift & Co. Oil Mills, Inc., is constructing a combination soybean and cottonseed oil processing plant at Blytheville, Ark. The new mill, costing $400,000, is scheduled to open about Sept. 1.

New "Swan" Campaign Coming

A new magazine campaign for "Swan" soap was announced April 30 by Lever Brothers Co., Cambridge, Mass., as an addition to "Swan" advertising which already includes large schedules in newspapers, radio programs and spots, and billboards. Full color pages in 30 national magazines, with a total circulation of over 74 million, are being scheduled for "Swan," it was announced.

U.S.I. ALCOHOL NEWS

June ★ A Monthly Review of Technical Developments for Chemists and Executives ★ 1942

A. A. Backus Dies; Was in Charge of Production for U.S.I.

Arthur A. Backus, Vice-President in Charge of Production of U.S.I. since 1928, was fatally injured on May 18 when he accidentally fell from a train en route from his home in Stamford, Conn., to New York.

During his many years with U.S.I., he rendered invaluable services to the company, serving as Director of Research from 1916 to 1924, and as Production Manager from 1924 to 1928. In 1928 he was appointed to the position which he held until the time of his death. He was also a director of Stroock & Wittenberg Corporation, Cuba Distilling Company, Dominican Molasses Company, and Porto Rico Mercantile Company.

A. A. Backus

He was a member of the American Chemical Society, American Institute of Chemical Engineers, Society of Chemical Industry, the Chemists' Club of New York, and the Uptown Club.

His loss will be keenly felt by all who associated with him, as well as by the chemical industry as a whole, the progress of which was materially aided by his valuable contributions.

Determinations of flash points for the various formulas of industrial alcohol, recently conducted at U.S.I.'s laboratories, show values considerably higher than those now listed in the Industrial Alcohol Catalog. A new data sheet has been prepared, listing revised flash points for pure, C.D., and S.D. Alcohol, as well as for alcohol-water mixtures. Copies can be obtained free of charge from U.S.I. Ask for Bulletin FP.

Empty 55-gallon drums should be returned promptly to maintain flow of materials. (See article in column at right.)

Physiological Properties of Urethan Lead to Wide Utility

U.S.I. Product Has Many Pharmaceutical Uses; Its Reactivity Suggests Still Other Applications in Organic Synthesis

The unusual effectiveness of urethan (ethyl carbamate) as a soporific, hypnotic, anti-spasmodic, and sedative has led to many applications for this U.S.I. product in pharmaceutical and biological fields. Studies indicate that large doses can be employed to induce a mild, natural sleep, because of urethan's ability to increase respiration without affecting pulse or temperature.

As a result of these properties, urethan is used as an ingredient in pharmaceuticals for the treatment of insomnia, eclampsia, nervous excitement, tetanus, excessive restlessness, convulsions and spasmodic conditions, and whooping cough. It is also employed as an antidote in strychnine, resorcinol, and picrotoxin poisoning.

While the applications of urethan resulting from its physiological properties are discussed in detail in this article, an entirely different field of utility in organic synthesis is opened by urethan's chemical reactivity. The more important chemical reactions of urethan are listed in a bulletin available on request from U.S.I.

A further pharmaceutical application of urethan is as a co-solvent to increase the solubility of quinine hydrochloride in water. A similar effect on the solubility of riboflavin has been noted in reports from abroad, which indicate that at 20° C. the solubility of riboflavin in water is 15 milligrams per 100 cc., while in 10% urethan the solubility increases to 41 milligrams per 100 cc.

An interesting field for further study may be suggested by other experiments abroad, in which it was found that subcutaneous injections of a 1% urethan-quinine solution increase the immunity of white mice to pneumococcus infection (type I).

A British patent suggests the addition of urethan to astringent cosmetic preparations containing an astringent salt with an inorganic base. Urethan has also been patented as a fixative for dyeing human hair.

Urethan is used in biological work also, as an anesthetic for fish and aquatic mammals, preliminary to hypodermic injections or operations.

Until recently, exploration of urethan's potentialities was hampered by the fact that it was available in commercial quantities only from foreign sources. At the present time, however, U.S.I.'s production of this interesting chemical permits thorough investigation of its utility.

TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

Thioglycolic acid is now available in commercial quantities in a grade especially produced for the requirements of the cosmetic industry, it is reported. Also available are salts of the acid, including sodium, calcium, and monoethanolamine thioglycolates. **(No. 580a)**

A coconut oil substitute is said to be suitable for use in the manufacture of liquid soaps. Maker says that it has the property of reducing viscosity of soap solutions without impairing their effectiveness, and that it can be used either to conserve stocks of coconut oil or to increase concentration of liquid soaps made from other fats. **(No. 581a)**

A pH indicator is available in both liquid and paper forms for quick determinations over the range from pH 0.0 to pH 10.0. Color chart appears directly on containers. Originally developed for physicians' use, indicator has many industrial applications also, according to the manufacturer. **(No. 582a)**

Paperboard containers for rouge, lipstick, and vanities are treated with an ethyl cellulose plastic to withstand moisture and resist wear, it is reported. The paper containers can be produced with printed designs. **(No. 583a)**

Wood containers are another new packaging possibility that is attracting increased attention. They are being produced from hard wood treated to prevent moisture absorption, and can be finished in any way that metal can, including lettering and designs of any kind. **(No. 584a)**

Users Asked to Return Empty 55-Gallon Drums

Users of U.S.I. products are urged to return all empty 55-gallon drums as promptly as possible, to relieve the container shortage.

U.S.I. suggests that as soon as two or more drums have been emptied, they should be turned over to the nearest freight agent for shipment to U.S.I. Large users should ship full carloads of 276 drums wherever practicable. Return freight will be paid by U.S.I., and credit will be given at full ceiling price for drums received in good condition, and which have not been used for storage of materials other than original contents.

To comply with Federal regulations, all markings on head of drum must be obliterated as soon as drum is emptied.

U.S.I. INDUSTRIAL CHEMICALS, INC.

60 EAST 42ND STREET, NEW YORK — CHEMICALS: INDUSTRIAL, ANTI- — SOLVENTS, ALCOHOLS, FREEZE — USI SERVICE TO INDUSTRY — BRANCHES IN ALL PRINCIPAL CITIES

Crown Can Elects Swartz

Richard P. Swartz, former assistant to the president of Crown Can Co., subsidiary of Crown Cork & Seal

RICHARD P. SWARTZ

Co., Baltimore, has just been elected president of Crown Can. Before his association with Crown Can Co., Mr. Swartz was plant manager of the parent company's bottling machinery division at Baltimore. He was made production manager of the Crown Can Company in 1938, vice-president in charge of production in 1940, and assistant to the president in 1941.

Amend Tinplate Order M-81

A second amendment to tin and terneplate Conservation Order M-81, issued April 30, by the WPB, permits the use for an indefinite period of stocks of tin and terneplate cans by canners of products in Tables I, II and III. (Table III includes special products cans.) Canners are also permitted to obtain from the can manufacturer and use, for packing products listed in Table III, cans of sizes or material other than specified in the table, provided the component parts of the cans were lithographed, cut, or otherwise prepared for assembly on or before February 11.

Give London War Picture

The shortage of man power in Britain is well illustrated by an account of present-day working conditions in the London factory of Standard Synthetics, Ltd., essential oil distillers. H. Barksfield, works manager writes:—"Our whole factory staff has gradually been drafted into the services and only the office members are left. As the work has still to be done, we get our office jobs done in the morning while our hands are clean; then in the afternoon we adjourn to the factory and get busy."

Warn Steel Drum Users

Users of metal containers have been advised by WPB that an extremely critical situation exists in steel and that extensive use of substitutes for steel containers must be undertaken at once. According to the WPB, steel container manufacturers may soon be forced to suspend operations until they are able to develop containers not using steel. *Soap* reported last month the anticipated issuance of an "L" order, banning use of steel drums, barrels and pails for the packaging of soaps, insecticides, disinfectants, sanitary supplies, etc. The order has not yet been issued, although it may come in the near future.

Grant Dorland Recuperating

Grant A. Dorland, advertising manager of *Soap and Sanitary Chemicals*, is in the White Cross Hospital, Columbus, Ohio, convalescing from an operation for a ruptured appendix performed early last month. He was on his way east when he suffered an emergency attack at Circleville, Ohio, the operation being delayed several days pending diagnosis. He is expected to return to New York early in June.

More Chlorine for Laundries

Permissible use of chlorine for linen supply, hotel and commercial operations has been increased from 10 per cent to 50 per cent of average monthly use during the base period, July 1, 1940, to June 30, 1941.

Main-Chem Gets Navy "E"

Main-Chem Supply Corporation, New York, was awarded the United States Navy "E" at a ceremony June 1 at the George Washington Hotel, New York. The concern packages cottonseed oil, U.S.P. glycerin, carbon tetrachloride and other products for the Naval Medical Depot.

Mayham Made TGA Secretary

S. L. Mayham, recently director of the Board of Standards of the Toilet Goods Association, has been named executive secretary succeeding the late Charles S. Welch. Mr. Mayham was formerly editor of *The American Perfumer* and prior to that connection served on the editorial staff of the *Oil, Paint and Drug Reporter*. His position as director of the TGA Board of Standards has been taken by H. D. Goulden, who left his position with the Jacqueline Cochrane Cosmetic Co. on June 1 to take up his new duties.

S. L. MAYHAM

TGA Convention June 16-17

All members of the toilet goods industry have been invited to the annual Toilet Goods Association Convention which is to be held at the Waldorf-Astoria Hotel, New York, June 16 and 17. All entertainment features, including the annual banquet, have been abandoned this year, and the convention is to be limited to business sessions.

Neuberg Chem. Changes Name

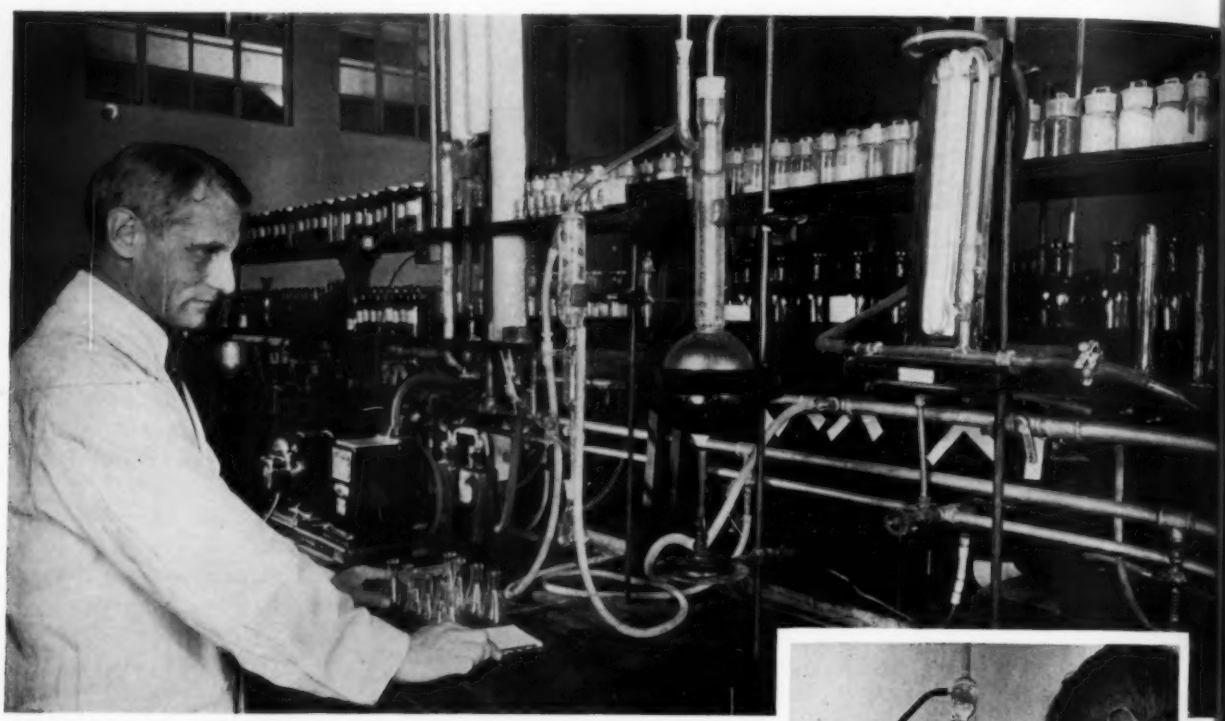
The name of the Neuberg Chemical Corp. has just been changed to Enco Chemical Corp. Offices are located at 441 Lexington Avenue, New York.

E. F. Houghton Moves

E. F. Houghton & Co., Philadelphia, textile processing products, have moved their New York offices from 480 Canal Street to 421 Seventh Avenue.

BACKGROUND VALUES . . . a PART of the product, APART from the p

ADULTERATION is the enemy against which both supplier and user of essential oils must guard. And their most effective protection is to buy from reliable, fair-dealing sources. In inaugurating our studies of foreign centers of production, one of our major purposes was to obtain *true* samples of essential oils made under the personal supervision of our own representative and known, therefore, to be absolutely pure. With these samples to guide us, we were in a position to set up our own exact standards for the finest essential oils. Today, even the most skilled adulteration by foreign agents, native middlemen or distillers, could not elude the scrutiny of our vigilant quality control specialists.



One of the most important aids in this work of checking essential oil quality is the fractional vacuum distillation set-up above. By this process a questionable oil is broken down into its various fractions, thus enabling the operator to examine carefully that fraction in which the adulterant is suspected. This same process permits exact identification of all constituents of an essential oil.

The Soxhlet unit, shown at the right, is a simple extraction apparatus used in U.S.P. tests and for special research work.

Every lot of oil entering our plant is subjected to the most searching examination before it is approved by our Control Laboratories and made available for sale. As a guarantee of satisfaction to our customers, it is a PART of all FRITZSCHE products, APART from their price!

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BRANCH STOCKS

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.

FACTORIES AT CLIFTON, N. J. AND SEILLANS (VAR) FRANCE

Headquarters for
ESSENTIAL OILS • FLAVORS
• AROMATIC CHEMICALS •
PERFUME RAW MATERIALS

Restrict Tank Car Use

Use of tank cars for shipments of 100 miles or less was restricted by an order issued May 15 by the Office of Defense Transporation. Permits are now required for such shipments, and will be issued only if it is shown that shipment by motor truck or other method of transportation is not available. Applications for permits must be made to Section of Tank Car Service, Office of Defense Transportation, Interstate Commerce Building, Washington, D. C., on Form ODT 7-1A.

Describe Manhattan Soap Plant

Design and manufacturing set-up of the plant of Manhattan Soap Co. at Bristol, Pa., are described in a comprehensive and well-illustrated article in the May, 1942, issue of *Chemical and Metallurgical Engineering*. The plant has recently been completely modernized, increasing output and improving product quality, while at the same time reducing the volume of manual labor.

Arthur Goldman in Navy

Arthur Goldman, formerly a New York City salesman with Standard Synthetics, Inc., has recently been commissioned as an Ensign in the U. S. Navy.

1940 Canada Soap Output

A total of 110 factories in Canada made soaps, washing compounds, or cleaning preparations as their chief products during 1940. Production from these works was valued at $20,855,880, or 3.5 per cent more than the output of $20,145,072 from the same number of establishments in this category in 1939. Forty-two of the plants were engaged primarily in the manufacture of soaps. These establishments reported 2,237 workers with production valued at $18,866,565. Thirty-six establishments made washing compounds as their chief product. Their output was valued at $743,452 and employees numbered 205. Javelle water and sodium hypochlorite were the chief products.

Thirty-two establishments made cleaning preparations as their main products in 1940. Production amounted to $1,245,863 and the number of employees was 207, while the corresponding data for 1939 showed 30 plants employing 202 people and output valued at $1,256,580. The main products were cleaning powders, hand cleaner and drain pipe cleaner. Imports of soap into Canada were valued at $396,286. This total included 959 tons of laundry soap at $134,100; 41 tons of castile soap at $6,911; 198 tons of soap powders at $33,433; 81 tons of liquid soaps at $17,421 and toilet soaps at $165,411. Exports were appraised at $265,115 compared with $643,857 in 1939. The principal export during the year was 777 tons of toilet soaps valued at $227,466.

METALLIC SOAPS

A review of the manufacture and application of metallic soaps by Stanley B. Elliott of Ferro Drier & Chemical Co., Bedford, Ohio, is scheduled for the July issue of SOAP AND SANITARY CHEMICALS. The two common methods of manufacture, precipitation and fusion, are covered, and applications in the production of fungicides, lubricating oils, ceramics, paints, etc. are considered.

Fire at Par Soap Plant

The three-acre plant of Par Soap Co., Oakland, Cal., was damaged to an estimated extent of $300,000 and at least four persons were injured as a result of a fire which broke out the night of May 7. Firemen worked for two hours with 30 pieces of equipment before bringing the fire under control.

Crown Plants Cork Trees

Crown Cork & Seal Co., expects to plant 1,000,000 cork oak trees in California this year and twice that many in 1943. According to Chas. E. McManus, Crown head, this step is being taken to provide a domestic source of supply for the future. The trees are expected to be ready for commercial use in about 15 years.

Canada Assumes Lye Control

Control over Canadian supplies of spent lye from soap manufacture has been assumed by Douglas Lorimer, Canadian controller of chemicals. The order provides that no person dealing in or having possession of spent lye, may concentrate, further treat or dispose of it except in accordance with instructions issued by the controller.

"Vray" Now Packaged in Glass

"Vray" toothpaste, product of Weco Products Co., Chicago, now being distributed in a glass bottle with a rubber dispenser, is currently advertised as "the first dental cream to be packaged in glass." Rubber dispenser caps used on the package were fabricated for the company before restrictions were imposed. Inserts are placed in each package reminding consumers to save the caps.

Robt. Engel with CWS

Robert Engel, in charge of the industrial chemicals department of Givaudan-Delawanna, Inc., New York, since 1927, took up new duties with the planning division of the U. S. Chemical Warfare Service on June 1. His headquarters were to be at the New York office of CWS.

Fritzsche Employee Joins Navy

Coley T. Brown, assistant to John H. Montgomery of Fritzsche Brothers, Inc., New York, has been commissioned as a Lieutenant in the U. S. Navy and at present is stationed in Washington, D. C. Mr. Brown is the 26th employee of Fritzsche Brothers, essential oil firm, to enter the nation's armed forces.

Offers Used Wrapping Machines

Package Machinery Co., Springfield, Mass., is currently offering to assist manufacturers who cannot obtain new wrapping machines because of the recent WPB freezing order L-83, by placing such companies in touch with other manufacturers who have idle machines they are willing to sell. In offering this service, the company makes it clear that it will neither buy nor sell these machines, but merely act as a go-between.

rust is laundry's greatest enemy!

So they're mighty careful about the paints they use!

RUST has always been a serious problem in laundries . . . large and small. Great care has been exercised in commercial laundries to treat the water . . . and extract all the iron content . . . to protect the clothes being handled from rust-spots.

It's just as important that no rust can come from the mechanical equipment. That's why the American Laundry Machinery Company uses Pecora Paints and Enamels on so much of the washing and ironing equipment it supplies to the laundry industry.

And the Pecora Paint Co. of Philadelphia takes equal care to protect *its* product. Stout, sturdy Crown Pails are used to safeguard all shipments of Pecora Products . . . with strong bails and wooden handles attached to facilitate handling. Manufacturers and painters both find these well-constructed bails and convenient handles one more excellent reason for preferring Crown Pails.

CROWN CAN COMPANY, PHILADELPHIA, PA., *Division of Crown Cork and Seal Company.* Baltimore • St. Louis • Houston • Madison • Orlando • Fort Wayne • New York • Nebraska City

CROWN CAN

INDEPENDENT AND HELPFUL

CONTRACTS AWARDED

Post Office Soap Awards

The following contracts were awarded by the Post Office Department, Washington, D. C., in a recent opening; Eagle Soap Co., Brooklyn, N. Y., 7,013 lbs. of grit cake soap at 4c a lb.; Stevens Soap Corp., Brooklyn, N. Y., 144,000 lbs. of scouring compound at 1.65c a lb.; and Procter & Gamble Distributing Co., Baltimore, Md., 12,000 lbs. soap f.o.b. New York 10.93c a lb., 4,000 lbs. f.o.b. Chicago at 10.93c a lb., 6,000 lbs. f.o.b. Atlanta, 10.92c a lb., 4,000 lbs. f.o.b. Kansas City 10.93c a lb., and 4,000 lbs. f.o.b. San Francisco at 12.13c a lb.

Soap Bid

Larkin Soap Co., Teaneck, N. J., submitted low bid on 24,000 lbs. of grit soap paste at 4.54c a lb. in a recent opening by the Treasury Procurement Department, Washington, D. C.

Salt Water Soap Bid

In a recent opening by the Navy Purchasing Department, New York, C. D. Young & Co., Philadelphia, submitted low bid on a total of 338,000 lbs. of salt water soap at 12.5c a lb., and Colgate-Palmolive-Peet Co., Jersey City, N. J., submitted a low bid of 7.6c a lb. on 150,000 lbs. of the total 338,000 lbs.

Disinfectant Award

Wm. Cooper & Nephews, Chicago, was awarded a contract for 200 cans of disinfectant at 55.75c a can, in a recent opening by the Treasury Procurement Department, Washington, D. C.

Treasury Procurement Awards

In a recent opening by the Treasury Procurement Department, Washington, D. C., the following awards were made: Wonder Chemical Co., Brooklyn, N. Y., 500 cans of metal polish at 8.97c; J. A. Tumbler Laboratories, Baltimore, Md., 500 lbs. cleaning compound at 18.25c; Solvay Sales Corp., Philadelphia, Pa., 375,000 lbs. of laundry soda at 1.72c; H. Kohnstamm & Co., New York, 143,-147 lbs. laundry soap at 10.22c; Swift & Co., Washington, D. C., 180,000 lbs. of laundry soap at 10.19c; and National Milling & Chemical Co., Philadelphia, Pa., 187,500 lbs. laundry soap at 2.98c.

Creosote Bid

Lastings Products Co., Baltimore, Md., submitted the low bid on 750 gals. of wood-preservative coal-tar creosote at 24c a gal., in a recent opening by the Marine Corps, Washington, D. C.

Metal Polish Bid

In a recent opening by the Navy Department, Washington, D. C., Wonder Chemical Co., Brooklyn, N. Y., submitted the low bid on 20,004 lbs. of metal polish at 6.58c a lb.

Furniture Polish Bid

Buckingham Wax Corp., Long Island City, N. Y., submitted the low bid on 400 cans of furniture polish at 69c a can, in a recent opening by the Treasury Procurement Department, Washington, D. C.

Green Soap Bid

Peck's Product Co., St. Louis, Mo., submitted the low bid on 12,500 lbs. of green soap at $1,171.25, in a recent opening by the Veterans Administration Procurement Division, Washington, D. C.

Treasury Procurement Bids

In a recent opening by the Treasury Procurement Department, Washington, D. C., the following low bids were submitted: Imperial Products Co., Philadelphia, 18,720 lbs. of scouring compound at 2.99c a lb.; Colgate - Palmolive - Peet Co., Jersey City, N. J., 180,000 lbs. of laundry soap at 5.65c a lb.; S. & S. Soap Corp., Brooklyn, N. Y., 18,750 lbs. of grit soap at 4.4c a lb.; Colgate-Palmolive-Peet Co., Jersey City, N. J., 22,500 lbs. of grit soap at 12.4c a lb.; J. R. Watkins Co., Winona, Minn., 1,800 lbs. of shaving soap at 21c a lb.; Du Bois Co., Cincinnati, 2,750 gals. liquid cleaner at 23c a gal.; and J. A. Tumbler Laboratories, Baltimore, Md., 1,000 lbs. of cleaning compound at 12.25c a lb.

Post Office Supply Bids

In a recent opening by the Post Office Department, Washington, D. C., for miscellaneous supplies, the following low bids were submitted: R. M. Hollingshead Corp., Camden, N. J., 1,200 gals. metal polish at 32c a gal.; A. M. R. Chemical Co., Brooklyn, N. Y., 4,000 gals. liquid polish at 40c a gal.; Thompson-Hayward Chemical Co., Chicago, 40 lbs. of tri-sodium phosphate at 3.25c a lb.; Windsor Wax Co., Hoboken, N. J., 14,000 gals. of liquid floor wax at 49.4c a gal.; Cole Laboratories, Long Island City, N. Y., 3,000 gals. floor wax at 69c a gal.

Vulcan Names McCarthy

Vern I. McCarthy, former secretary and general manager of Vulcan Stamping & Mfg. Co., steel shipping containers, Bellwood, Ill., was elected president of the company at the recent annual meeting of the board. Mr. McCarthy succeeds his father, P. H. McCarthy, who was named chairman of the board. The senior McCarthy founded the company in 1916. Dale M. Harpold continues as vice-president and general sales manager.

Lueders Honors McCarthy

Dennis L. McCarthy completing 25 years with George Lueders & Co., New York, was honored at a luncheon recently when he was made a member of the Lueders 25-year club. He was presented with a gold watch by Fred Lueders, president of the company, at the luncheon and also with a radio-victrola from the employes of the company. The Lueders 25-year club now has 32 members, according to Mr. Lueders, many of whom were present at the luncheon.

What's a musical comedy got to do with winning a war?

PLENTY! We're building an army of men—not machines. And men have minds. And minds need refreshing . . . change . . . relaxation.

USO Camp Shows, Inc. is actually the biggest single theatrical enterprise the world has ever seen. It books 264 shows for the boys every week, which play to an average nightly attendance of 50,000.

To help carry on the all-important work of maintaining the morale of our fighting forces, the USO needs your help . . . it needs your contribution.

For we have a war to win, and the USO is directly concerned with the men who must—and will—win it.

Dig deep—for the men who are digging in!

Send your contribution to your local USO committee or to the National Headquarters, USO, Empire State Building, New York City.

☆ USO ☆

George Lueders & Co.

427 WASHINGTON STREET, NEW YORK, N. Y.

BRANCHES: CHICAGO • SAN FRANCISCO • MONTREAL

REPRESENTATIVES: ST. LOUIS—PHILADELPHIA

Essential Oils • *Aromatic Chemicals* Established 1885 *Perfume Materials* • *Colors*

NEW TRADE MARKS

The following trade-marks were published in the May issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks Filed

DORICON—This in solid lettering describing solvent soap. Filed by C. H. Stone Co., Lynnfield Center, Mass., Oct. 21, 1941. Claims use since March 7, 1941.

TAY-KOF—This in fancy letters within oval above representation of plane. Filed Feb. 4, 1942. Filed by Fred Deliguori, Washington, D. C. Claims use since Dec. 1, 1941.

WHITE SAIL—This in solid letters describing household cleanser. Filed by Great Atlantic & Pacific Tea Co., New York, Feb. 17, 1942. Claims use since Sept. 18, 1940.

BOMB SHELL—This in solid lettering describing non-spray liquid insecticide. Filed by Hanley and Kinsella Laboratories, Inc., St. Louis, Feb. 26, 1942. Claims use since Feb. 16, 1942.

CAMEO CLEANSER — This in solid letters describing general household cleanser. Filed by Cameo Corporation, Chicago, Mar. 14, 1941. Claims use since Feb. 19, 1941.

HABITANT — This in reverse letters over the words "scalp treatment shampoo," describing shampoo. Filed by S. Bonat & Bros., New York, Mar. 5, 1942. Claims use since Sept. 7, 1941.

PLAUDIT—This in solid lettering describing cleaning compound. Filed by Turco Products, Inc., Los Angeles, Feb. 4, 1942. Claims use since Dec. 2, 1937.

UGALUMIN—This in solid letters describing disinfectants. Filed by Merz & Co., Chemical Works, Inc., Newark, N. J., Mar. 15, 1941. Claims use since Mar. 17, 1930.

AJAX—This in solid lettering describing anti-rust and flushing compounds. Filed by Commercial Solvents Corporation, New York, July 28, 1941. Claims use since June 13, 1941.

HAIR-POO—This in solid letters describing shampoo. Filed by Homer H. Dary & Son, Racine, Wisc., Oct. 27, 1941. Claims use since Aug. 1, 1940.

"HERMOX"—This in solid letters describing sodium hypochloride disinfectant. Filed Mar. 28, 1942, by Fred Herman & Sons, Chicago. Claims use since Feb. 15, 1942.

EFFORTLESS—This in solid letters describing rust remover. Filed by L & L Products, Chicago, Mar. 22, 1941. Claims use since Jan. 17, 1941.

ABC — This in solid letters within circular emblem describing vegetable soap. Filed by A B C Co., New York, May 23, 1941. Claims use since Mar. 26, 1937.

DEFENSEEZ—This in solid letters on drawing of two hands enclosing a rising sun, describing hand cleaner soap powder. Filed by Frederic Lambert, New York, Nov. 4, 1941. Claims use since Oct. 15, 1941.

SPRAY-SAN—This in solid letters describing liquid soap for cleaning flooring. Filed by Huntington Laboratories, Inc., Huntington, Ind., Jan. 15, 1942. Claims use since May 25, 1935.

CARBRAX—This in solid letters describing automotive and aircraft-cleaning compound. Filed by Turco Products, Inc., Los Angeles, Feb. 4, 1942. Claims use since Feb. 15, 1938.

AMOCO—This in outline letters within oval emblem describing soap and cleaning solvent. Filed by American Oil Co., Baltimore, Md., Feb. 16, 1942. Claims use since Jan. 22, 1933.

IVORY—This in lined letters within square emblem describing soap. Filed by Procter & Gamble Co., Cincinnati, Feb. 23, 1942. Claims use since Oct. 1930.

FIZ-O-FOAM — This in script lettering describing foaming bath powder. Filed by Banson Products Co., Los Angeles, Mar. 4, 1942. Claims use since Nov. 15, 1940.

Trade Marks Granted

394,206. Chemical polishing cloths. Filed Oct. 27, 1941. Auto Supplies Mfg. Co., Denver, Col. Serial No. 448,128. Published Jan. 13, 1942. Class 4.

394,229. Washing powder. Filed Nov. 15, 1941. Charlotte Chemical Laboratories, Inc., Charlotte, N. C. Serial No. 448,672. Published Jan. 13, 1942. Class 4.

394,231. Soaps. Filed Nov. 19, 1941. Cosmata, Inc., Long Island City, N. Y. Serial No. 448,756. Published Jan. 13, 1942. Class 4.

394,442. Antiseptic mouth wash. Filed Aug. 5, 1941. Drug Guild, Inc., New York. Serial No. 445,979. Published Jan. 13, 1942. Class 6.

394,760. Cleaning material. Filed Oct. 17, 1941. Ralph Barker Lester, Barker Chemical Co., New York. Published Feb. 17, 1942. Serial No. 447,883. Class 4.

394,766. Detergent. Filed Oct. 25, 1941. C. S. Welch Co., New York. Published Feb. 17, 1942. Serial No. 448,121. Class 4.

394,811. Shaving cream. Filed Nov. 27, 1941. Lambert Pharmacal Co., Wilmington, Del. Published Feb. 17, 1942. Serial No. 448,975. Class 4.

394,817. Soaps. Filed Nov. 29, 1941. Parfums Schiaparelli, Inc., New York. Published Feb. 17, 1942. Serial No. 449,059. Class 4.

394,986. Moth destroyer. Filed Dec. 22, 1941. R. H. Bogle Co., Alexandria, Va. Published Feb. 17, 1942. Serial No. 449,664. Class 6.

395,034. Liquid cleaner for cloths and furs. Filed Feb. 28, 1939. Health-Gard Process Co., Brooklyn, N. Y. Published Feb. 4, 1941. Serial No. 416,500. Class 4.

395,038. Liquid shampoo. Filed Aug. 19, 1940. A'Vells Co., Chicago. Published Mar. 3, 1942. Serial No. 435,124. Class 6.

ALL-OUT WAR EFFORT

...demands greater production of GLYCERINE

USE OF NEUTRAL OILS AND FATS IS THEREFORE RESTRICTED

Regarding...

COCONUT OIL

...You have on hand

1st Place 25% in drums or tank and hold for Government instructions.

2nd Glycerine must be removed from balance and you can use the fatty acids to the extent of 75% of your 1941 usage figuring on using 1/12th monthly.

3rd We can remove the glycerine and return good colored fatty acids either in tanks or lacquered-lined drums.
Write us advising how much you have on hand and we will gladly give you full details, cost, yield, delivery, etc.

RED OIL and STEARIC ACID — Saponified and Distilled
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395,041. Athlete's foot preparation. Filed by L L's Antiseptic, Nashville, Tenn. Nov. 8, 1940. Published Mar. 3, 1942. Serial No. 437,671. Class 6.

395,051. Shampoo. Filed by Antiseptol Company, Chicago, Feb. 13, 1941. Published Feb. 24, 1942. Serial No. 440,615. Class 6.

395,054. Deodorizer and disinfectant. Filed by Abbot Laboratories, North Chicago, Mar. 22, 1941. Published May 20, 1941. Serial No. 441,803. Class 6.

395,084. Household bleach. Filed by Federated Foods, Inc., Chicago, Oct. 15, 1941. Published Feb. 24, 1942. Serial No. 447,802. Class 6.

395,086. Athlete's foot preparation. Filed Oct. 20, 1941. L. Turnipseed, Inc., St. Louis, Mo. Published Feb. 24, 1942. Serial No. 447,692. Class 6.

395,097. Textile cleansing agent. Filed Nov. 15, 1941. Charlotte Chemical Laboratories, Inc., Charlotte, N. C. Published Feb. 24, 1942. Serial No. 448,670. Class 6.

395,104. Insecticides. Filed by Medical Supply Co., St. Petersburg, Fla. November 24, 1941. Published Mar. 3, 1942. Serial No. 448,867. Class 6.

395,106. Bubble bath. Filed Nov. 24, 1941. Schratz, Inc., Detroit. Published Feb. 24, 1942. Serial No. 448,874. Class 6.

395,125. Shampoo preparation. Filed by Packers Tar Soap, Inc., Mystic, Conn. Dec. 5, 1941. Published Feb. 24, 1942. Serial No. 449,210. Class 6.

395,129. Shampoo. Filed by Ondolea Co., New York. Dec. 5, 1941. Published Feb. 24, 1942. Serial No. 449,243. Class 6.

395,144. Shampoo. Filed by Pine Coco Products, Inc., Des Moines, Iowa. Dec. 17, 1941. Published Feb. 24, 1942. Serial No. 449,553. Class 6.

395,162. Metal polish in paste form. Filed by General Chemical Co., New York. Dec. 29, 1941. Published Mar. 3, 1942. Serial No. 449,837. Class 4.

395,162. Soap, wallpaper and glass cleaner. Filed by Kroger Grocery & Baking Co., Cincinnati. Dec. 30, 1941. Published Feb. 24, 1942. Serial No. 449,859. Class 4.

395,163. Water softener. Filed by Kroger Grocery & Baking Co., Cincinnati. Dec. 30, 1941. Serial No. 449,860. Published Mar. 3, 1942. Class 6.

395,180. Bubble bath preparation. Filed by Lehn & Fink Products Corp., Bloomfield, N. J. Jan. 9, 1942. Serial No. 450,106. Published Feb. 24, 1942. Class 6.

395,295. Insecticides. Filed by Stauffer Chemical Co., San Francisco. Dec. 22, 1941. Serial No. 449,705. Published Mar. 10, 1942. Class 6.

395,318. Foot powder. Filed by Williams Products Co., Columbus, Ga., Jan. 12, 1942. Published Mar. 10, 1942. Serial No. 450,173. Class 6.

395,324. Athlete's foot preparation. Filed by Abbott Laboratories, North Chicago, Ill., Jan. 26, 1942. Serial No. 450,466. Published Mar. 10, 1942. Class 6.

—— • ——

Await WPB Glycerine Order

Orders which the soap industry has been expecting the War Production Board to issue, limiting the residual glycerol content of soaps regardless of the fats used, have not yet made their appearance, and there is no official word as yet as to just when such orders may appear. There seems to be considerable confusion in the trade on this point, with some firms having the mistaken idea that orders have already been issued banning the manufacture of cold-made soaps, or fixing the maximum glycerol content of liquid, potash, cold-made and half-boiled soaps,—even when made from domestic oils—at 2.75 per cent, and at 0.7 per cent for boiled settled soaps. These are the figures which the government has been reported as having under consideration, but up to this point no official orders have as yet been issued restricting soaps made from domestic oils or fatty acids of any type.

The only present restrictions on soap manufacture are embodied in General Preference Order M-60, which applies only to the imported, high-lauric-acid-content oils, coconut, palm kernel, babassu, etc. Use of these oils in soap manufacture, or for any other purpose, is prohibited, unless at least 90 per cent of the glycerine is recovered. Where glycerine is not recovered the manufacturer is required to use fatty acids to comply with the order.

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CSA Hears Dr. Addinall

Members of the Salesmen's Association of the American Chemical Industry held a dinner meeting at the Chemists' Club, New York, May 19, with Dr. C. R. Addinall of Merck & Co. as guest speaker. His topic was "The Importance of Vitamins in the World Today."

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Soap Staff Writer Joins Navy

Stephen Dole, on the editorial staff of *Soap and Sanitary Chemicals* for the past two years, has just been commissioned as an Ensign with the U. S. Navy. He reported for active duty at the New York receiving station on May 30. Mr. Dole is a graduate of Lafayette College, B.S. in Chem., 1937. He was married in June, 1941.

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Broaden Oil, Fat Restrictions

Control of imports of all known commercial oils not previously under such restriction and also of glycerine was taken recently by WPB under Amendment No. 6 to General Imports Order M-63. It was thought the Government could expedite the flow better than private importers. The additions to the list include crude and refined glycerine, beef and mutton tallow, corn, cottonseed, linseed, peanut and whale oil, etc.

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SOCMA Meets at Seaview

The annual meeting of the Synthetic Organic Chemical Manufacturers Association was held at the Seaview Country Club, Absecon, N. J., June 5. The annual golf tournament was held on the following day.

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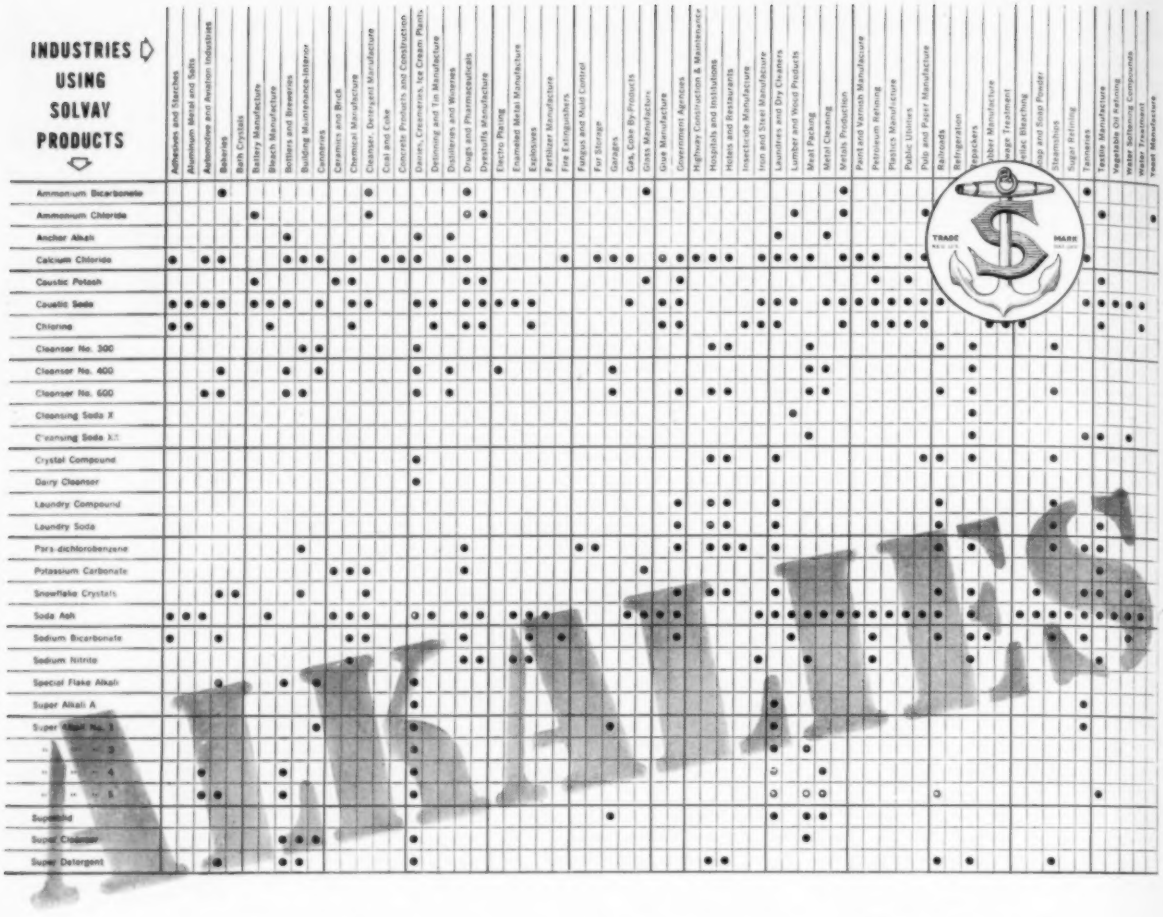
MCA Meets in New York

The seventieth annual meeting of the Manufacturing Chemists' Association was held in New York City at the Waldorf-Astoria, June 4.



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Perhaps you as a manufacturer of papers, metals, textiles or some other commodity do not realize that alkalies are a factor in nearly all industries—*practically every one of which is on a war time production basis.*

This explains why, even though Solvay is America's largest producer of alkalies, it cannot always supply full alkali requirements of the many Solvay customers who manufacture other than war materials.

Yet, as fast as changeovers can possibly be made, we are *increasing* production of important alkalies and related products to meet war time needs. At the same time, it is possible that Solvay Technical Service may prove helpful in finding a solution to problems arising from material shortages. Inquiries are cordially solicited.

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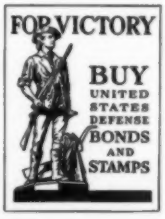

Soda Ash · Caustic Soda · Caustic Potash · Modified Sodas · Para dichlorobenzene · Potassium Carbonate · Chlorine
Ammonium Bicarbonate · Ammonium Chloride · Calcium Chloride · Causticized Ash · Salt · Sodium Nitrite

RAW MATERIAL MARKETS

As of May 29, 1942

NEW YORK—Ceilings became effective during the month on every product sold by the manufacturer of soaps and sanitary chemicals and on most of the raw materials which go into these products in accordance with the General Maximum Price Regulation of the Office of Price Administration. Considerable difficulty in determining ceiling prices was experienced by producers of certain raw materials, while on other raw materials, notably imported items such as essential oils, where costs have risen since March, ceiling levels were considered unprofitably low by the seller. It is believed by most sellers that the OPA will provide relief by raising ceiling levels in those cases where compliance with the price freezing order would mean selling at a loss for reasons beyond the control of the individual seller.

The situation among the soap-making oils and fats, which were unaffected by the general price ceiling order, having been frozen months earlier by price schedule No. 53, remained about the same as a month ago, with quotations stationary and offerings light. It was predicted during the month by the Bureau of Agricultural Economics, Washington, D. C., that total apparent disappearance of primary fats and oils in the United States in 1942, if unrestricted, will equal or exceed the record disappearance of nearly 11,000,000 pounds in 1941.

In the first amendment to general preference order M-60, relating to the high lauric acid oils, the War Production Board provided for a limited use of these oils in edible products during the summer months. The amendment permits each manufacturer of edible products, except margarine, shortening or cooking fats, to use in June and July 50% of the amount be used in the corresponding month in 1941, and in August and September 25%. This exception expires on September 30. After that date, oils left in the hands of food manufacturers will be frozen. It was pointed out that a considerable portion of the oil which may be used under the terms of the amendment has already been refined and to use it for glycerine production would represent an economic loss.

Distribution of naphthalene was placed under rigid allocation control, beginning June 1, under terms of conservation order M-105 issued during the month by the WPB. After that date, except for certain exempted types of deliveries, all naphthalene shipped by a producer or distributor must be delivered in accordance with schedules issued by the director of industry operations at the beginning of each calendar month. Deliveries which may be made without specific authorization include the following: deliveries up to 250 pounds to any one person in any one month, and deliveries of oils containing less than 25 per cent naphthalene. Intra-company or intra-plant deliveries of naphthalene are subject to the restrictions imposed by the order if the deliveries are made for further processing or manufacturing into another product. Packaging, sale, or use of naphthalene as a moth preventive or insecticide are regarded as "further processing."

Activity in the essential oil market declined sharply last month after the requirements of the General Maximum Price Regulations became effective. With the necessity of returning to the maximum price levels of the March period, many sellers found that at these prices they would be forced to sustain a definite loss on current sales. Accordingly, they were willing to quote only on very limited quantities for regular buyers, holding aloof from the market in the hope that ceiling levels may be raised by action of the Office of Price Administration. Whenever the seller has manufacturing facilities, he is inclined to hold his raw materials for his own use rather than to offer them for sale.

In the chemical list caustic soda is reported to be in an easier supply situation, due to lighter demand and heavier production in keeping with the high output of chlorine. White arsenic has just been placed under allocation control. Other recent additions to the allocation list include butyl alcohol, ispropyl alcohol, caprylalcohol and methylethyl ketone.

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Vote Coconut Tax Repeal

A bill to repeal the 2-cents per pound added penalty on the processing of coconut oil originating other than in the Philippines was passed by the U. S. House of Representatives June 1. In support of the bill Representative Doughton of North Carolina pointed out that the differential is no longer of any benefit to the Philippines and merely serves as a serious obstacle to the purchase and importation into the United States of copra and coconut oil originating in other areas.

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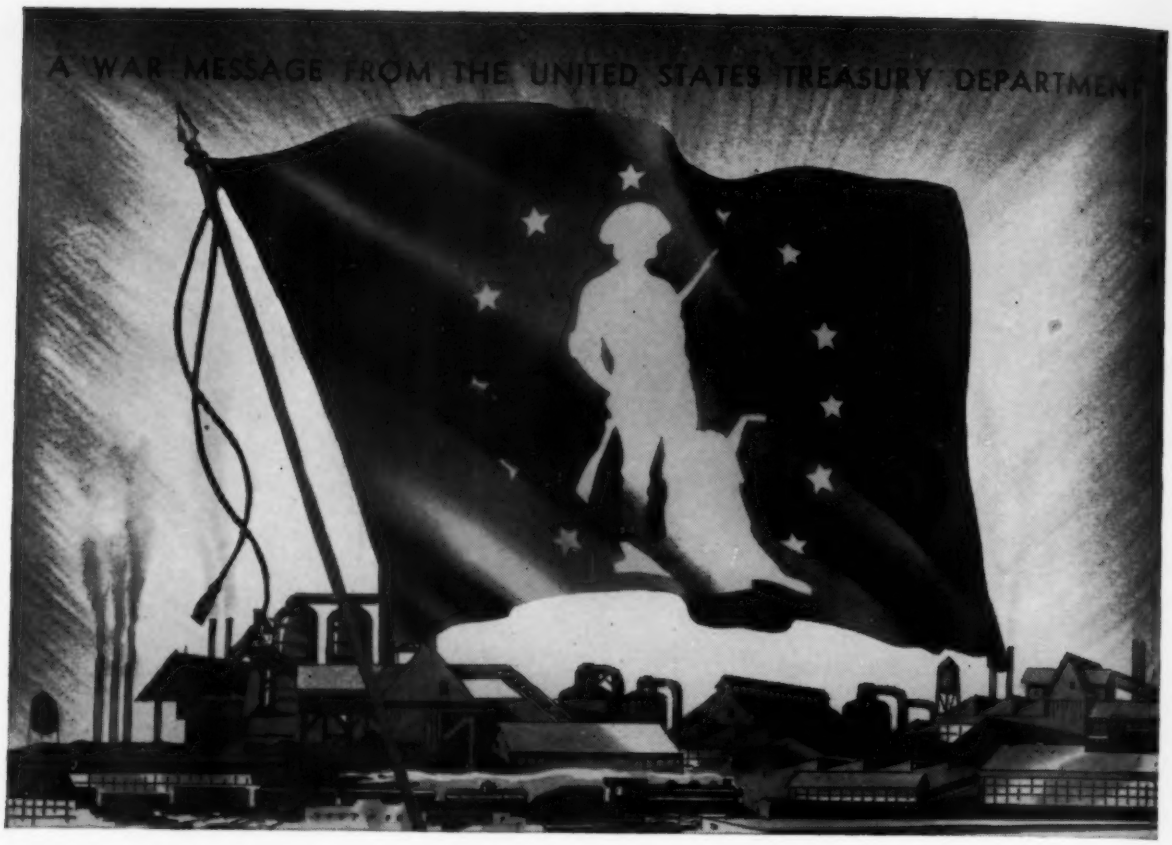
Soap Employment Index Drops

The index of employment in the soap industry, compiled monthly by the U. S. Department of Labor dropped to a figure of 92.3 for the month of April from the March, 1942, reading of 92.6. This compares with 91.6 for April, 1941. The payroll index registered 136.9 in April, 1942, as against 137.3 in March and 115.6 in April, 1941.



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Signifying 90 Percent or More Employee Participation in the Pay-Roll Savings Plan

IT doesn't go into the smoke of battle, but wherever you see this flag you know that it spells Victory for our boys on the fighting fronts. To everyone, it means that the firm which flies it has attained 90 percent or more employee participation in the Pay-Roll Savings Plan . . . that their employees are turning a part of their earnings into tanks and planes and guns *regularly,* every pay day, through the systematic purchase of U. S. War Bonds.

You don't need to be engaged in war production activity to fly this flag. Any patriotic firm can qualify and make a vital contribution to Victory by making the Pay-Roll Savings Plan available to its employees, and by securing 90 percent or more employee participation. Then notify your State Defense Savings Staff Administrator that you have reached the goal. He will tell you how you may obtain your flag.

If your firm has already installed the Pay-Roll Savings Plan, now is the time to increase your efforts: (1) To secure wider participation and reach the 90-percent goal; (2) to encourage employees to increase their allotments until 10 percent or more of your gross pay roll is subscribed for Bonds. "Token" allotments will not win this war any more than "token" resistance will keep our enemies from our shores, our homes. If your firm has yet to install the Plan, remember, TIME IS SHORT.

Write or wire for full facts and literature on installing your Pay-Roll Savings Plan now. Address Treasury Department, Section D, 709 12th St., NW., Washington, D. C.

Make Every Pay Day "Bond Day"

U. S. WAR Bonds ★ Stamps

This Space is a Contribution to Victory by SOAP AND SANITARY CHEMICALS

U. S. GOVERNMENT PRINTING OFFICE 16—27879-1

Form No. DSS-BP-4

RAW MATERIAL PRICES

(As of May 29, 1942)

Minimum Prices are for car lots and large quantities. **Price range represents** variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C.P., drums	lb.	$ .08½	$ .09
Acid, Boric, bbls., 99½%	ton	106.00	128.00
Cresylic, drums	gal.	.81	.86
Low boiling grade	gal.	.81	.86
Muriatic, C. P., carboys	lb.	.08	—
Oxalic, bbls.	lb.	.11¼	.14¼
Adeps Lanae, hydrous, drums	lb.	.32	.34
Anhydrous, drums	lb.	.33	.35
Alcohol, Ethyl, drums	gal.	8.19	8.25½
Complete Denat., SD1, dms., ex.	gal.	.60	.65
Alum. Potash lump, bbls.	lb.	.04½	—
Ammonia Water, 26°, drums	lb.	.02¼	.02½
Ammonium Carbonate, tech., drums	lb.	.08¼	.09¼
Bentonite	ton	25.00	51.00
Bleaching Powder, drums	100 lb.	2.25	3.35
Borax, pd., bbls., bags	ton	50 00	75.00
Carbon Tetrachloride, car lots	gal.	.73	1.17
L. C. L.	gal.	.80	1.27
Caustic, see Soda Caustic, Potash Caustic			
China Clay, filler	ton	7.60	16.00
Cresol, U.S.P., drums	lb.	.11	.11¾
Creosote Oil	gal.	.141	.15½
Feldspar, works	ton	30.00	35.00
Formaldehyde, bbls.	lb.	.05¾	.07¼
Fullers Earth	ton	8.50	15.00
Glycerine, C.P., drums	lb.	.18¼	.19¼
Dynamite, drums	lb.	.18¼	.18¾
Saponification, drums	lb.	.12¾	.14¾
Soap lye, drums	lb.	.11½	—
Hexalin, drums	lb.	.23	—
Lime, live, bbls.	ton	6.25	13.00
Mercury Bichloride, drums	lb.	2.24	2.39
Naphthalene, ref. flakes, bbls.	lb.	.08	—
Nitrobenzene (Mirbane) drums	lb.	.08	.09
Orthodichlorbenzene	lb.	.07½	.08½
Paradichlorbenzene, drums	lb.	.11	.15
Petrolatum, bbls. (as to color)	lb.	.03½	.08
Phenol (Carbolic Acid) drums	lb.	.12½	.14¼
Pine Oils, drums	gal.	.74	1.10
Potash, Caustic, solid	lb.	.06¼	.06¾
Flake, 88-92%	lb.	.07	.07¼
Liquid, 45% basis	lb.	.02⅞	.03¼
Potassium Carbonate, solid	lb.	.06½	.06¾
Liquid	lb.	.03	.03⅛
Pumice Stone, coarse	lb.	.03½	.04¾
Rosins (net wt., ex dock, New York)—			
Grade D to H	100 lb.	2.73	3.53
Grade I to N	100 lb.	3.53	3.70
Grade WG to X	100 lb.	3.71	3.75
Wood, ex. dock	100 lb.	—	—
Rotten Stone, dom., bags	lb.	.02½	.04
Silica	ton	20.00	27.00
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.05	1.45
Car lots, in bulk	100 lb.	.90	.95
Soda Caustic, cont., wks., solid	100 lb.	2.30	—
Flake	100 lb.	2.70	2.95
Liquid, tanks, 47-49%	100 lb.	1.92½	1.95
Soda Sal., bbls.	100 lb.	1.10	1.30
Sodium Chloride (Salt)	ton	14.20	18.00
Sodium Fluoride, bbls.	lb.	.08	.09¼
Sodium Hydrosulfite, bbls.	lb.	.17	.18
Sodium Metasilicate, anhyd.	100 lb.	4.00	5.30
Granulated	100 lb.	2.50	3.55
Sodium Pyrophosphate	100 lb.	5.25	6.80
Sodium Silicate, 40 deg., drum	100 lb.	.80	1.20
Drums, 52 deg. wks.	100 lb.	1.40	1.80
Tar Acid Oils, 15-25%	gal.	.27½	.33½
Triethanolamine	lb.	.18	.20
Trisodium Phosphate, bags, bbls.	100 lb.	2.70	4.30
Zinc Oxide, lead free	lb.	.07¼	.07¾

Oils — Fats — Greases

Babassu, tanks, futures	lb.	.11½	Nom.
Castor, No. 1, bbls.	lb.	.14	.14½
No. 3, bbls.	lb.	.13¾	.14¼
Coconut (without excise tax)			
Manila, tanks, N. Y.	lb.	—	—
Tanks, Pacific Coast, futures	lb.	—	—
Copra, bulk, coast	lb.	—	—
Corn, tanks, West	lb.	.12¾	—
Cottonseed, crude, tanks, mill	lb.	.12⅝	—
PSY, futures	lb.	.14	—
Fatty Acids—			
Corn Oil, tanks, Chicago	lb.	.14	.14½
Coconut Oil, tanks, Twitchell, Chi.	lb.	.17	.17½
Cotton Oil, tanks, Chicago	lb.	.13	.13½
Settled soap stock, Chicago	lb.	.03⅞	.04
Boiled soap stock, 65%, Chi.	lb.	.04⅞	.05
Foots, 50%, Chicago	lb.	.03¾	.04
Castor Oil, split, tanks, N. Y.	lb.	.20¼	—
Linseed Oil, split, tanks, N. Y.	lb.	.18½	—
Distilled	lb.	.20¼	—
Myristic acid, distilled, tanks, N. Y.	lb.	.18½	—
Palm Oil, white, tanks, N. Y.	lb.	.12½	—
Single distilled	lb.	.11¼	—
Soybean Oil, split, tanks, N. Y.	lb.	.16	—
Distilled	lb.	.17¾	—
Red Oil, bbls., dist. or sapon.	lb.	.1330	.1430
Tanks	lb.	.1245	—
Stearic Acid, saponif.			
Double pressed	lb.	.1580	.1680
Triple pressed	lb.	.1885	.1985
Greases, choice white, tanks	lb.	.0971¼	—
Yellow	lb.	.0929⅝	—
Lard, city, tubs	lb.	.12½	—
Linseed, raw, bbl.	lb.	.1410	.1490
Tanks, raw	lb.	.1320	.1340
Olive, denatured, bbls., N. Y.	gal.	4.20	4.30
Foots, bbls., N. Y.	lb.	.19½	.20
Palm, Sumatra, cif. New York, Tanks	lb.	—	—
African, tanks, ex. ship	lb.	.08¼	—
Palm, kernel, f.o.b. San F.	lb.	—	—
Peanut, crude, tanks, mill	lb.	.13	—
Soya Bean, domestic, tanks, crude	lb.	.12½	—
Stearin, oleo, bbls.	lb.	.1054	—
Tallow, special, f.o.b. N. Y.	lb.	.0957⅝	—
City, ex. loose, f.o.b. N. Y.	lb.	.0971¼	—
Teaseed Oil, crude	lb.	—	—

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Shampoo

Liquid Olive Oil Soap

Liquid Vegetable Oil Soap

40% and 30% (Only)

To replace coconut oil soaps

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Powdered Soap

U. S. P. Castile (Only)

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Potash Soaps

Soft Potash 40%

Hard Potash 70%

U.S.P. XI Green

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Scrub Soaps

Plain, Pine, Sassafras

KRANICH SOAP COMPANY

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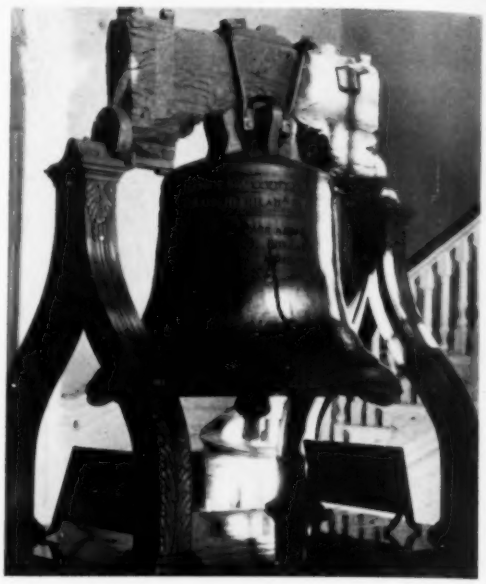
SOAPS



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(As of May 29, 1942)

Essential Oils

Almond, Bitter, U.S.P.	lb.	$3.50	$3.75
Bitter, F.F.P.A.	lb.	4.75	5.00
Sweet, cans	lb.	2.30	2.40
Anise, cans, U.S.P.	lb.	3.50	3.75
Bay, 55-66% phenols, cans	lb.	1.85	2.45
Bergamot, coppers	lb.	32.00	Nom.
Artificial	lb.	2.25	6.50
Birch Tar, rect., cans	lb.	—	—
Crude, cans	lb.	—	—
Boise de Rose, Brazilian	lb.	5.00	5.25
Cayenne	lb.	—	—
Cade (juniper tar), drums	lb.	1.50	Nom.
Cajeput, tech, drums	lb.	—	2.10
Calamus, cans	lb.	—	—
Camphor, Sassy, drums	lb.	—	—
White, drums	lb.	—	—
Cananga, native, cans	lb.	17.00	17.50
Rectified, cans	lb.	18.25	20.00
Cassia, Redistilled, U.S.P.	lb.	10.50	12.00
Cedar Leaf, cans	lb.	1.05	1.35
Cedar Wood, light, drums	lb.	.80	1.00
Citronella, Java, drums	lb.	—	—
Citronella, Ceylon, drums	lb.	1.30	1.70
Clove, U.S.P., cans	lb.	1.85	2.10
Eucalyptus, Austl., U.S.P., cans	lb.	1.05	1.30
Fennel, sweet, cans	lb.	4.20	—
Geranium, African, cans	lb.	30.00	Nom.
Bourbon, cans	lb.	24.00	—
Turkish (Palmarosa)	lb.	5.25	5.50
Hemlock, cans	lb.	1.20	1.25
Lavender, 30-32% ester, cans	lb.	—	—
Spike, Spanish, cans	lb.	4.25	4.35
Lemon, Ital., U.S.P.	lb.	—	Nom.
Cal.	lb.	3.25	—
Lemongrass, native, cans	lb.	4.00	4.20
Linaloe, Mex., cases	lb.	4.25	—
Nutmeg, U.S.P., cans	lb.	4.75	6.00
Orange, Sweet, W. Ind., cans	lb.	6.00	6 25
Italian cop	lb.	8.00	Nom.
Distilled	lb.	1.70	—
California, expressed	lb.	3.25	—
Origanum, cans, tech	lb.	2.85	2.90
Patchouli	lb.	9.25	9 50
Pennyroyal, dom.	lb.	—	—
Imported	lb.	2 75	3.00
Peppermint, nat., cans	lb.	5.50	5.75
Redis., U.S.P., cans	lb.	6.00	6.25
Petitgrain, S. A., cans	lb.	1.85	1.90
Pine Needle, Siberian	lb.	3.00	3.25
Rosemary, Spanish, cans	lb.	2.25	2.30
drums	lb.	2.10	2.15
Sandalwood, dom., dist., U.S.P.	lb.	6.90	7.00
Sassafras, U.S.P.	lb.	1.75	1.80
Artificial, drums	lb.	—	—
Spearmint, U.S.P.	lb.	3.10	3.25
Thyme, red, N. F.	lb.	2.75	3.25
White, N. F.	lb.	3.00	3.50
Vetiver, Java	lb.	42.00	50.00
Ylang Ylang, Bourbon	lb.	—	—

Aromatic Chemicals

Acetophenone, C. P.	lb.	$1.55	$1.60
Amyl Cinnamic Aldehyde	lb.	—	—
Anethol	lb.	2.25	2.40
Benzaldehyde, tech.	lb.	.45	.55
N. F. VI	lb.	.85	.95
Benzyl, Acetate	lb.	.59	Nom.
Alcohol	lb.	.63	.75
Citral	lb.	5.50	7.00
Citronellal	lb.	2.75	3.25
Citronellol	lb.	7.00	7.25
Citronellyl Acetate	lb.	—	—
Coumarin	lb.	2.75	3.25
Diphenyl oxide	lb.	.43	.50
Eucalyptol, U.S.P.	lb.	2.00	2.50
Eugenol, U.S.P.	lb.	2.75	2.80
Geraniol, Soap	lb.	1.10	1.50
Other grades	lb.	1.50	3.50
Geranyl Acetate	lb.	—	—
Heliotropin	lb.	5.25	Nom.
Hydroxycitronellal	lb.	10.25	10.50
Indol, C. P.	lb.	28.00	30.00
Ionone	lb.	2.75	3.95
Isoborneol	lb.	.81	.90
Iso-bornyl acetate	lb.	.80	.95
Iso-Eugenol	lb.	—	—
Linolool	lb.	6.75	7.00
Linalyl Acetate	lb.	5.50	7.25
Menthol, natural	lb.	13.00	13.50
Synthetic, U.S.P.	lb.	13.00	—
Methyl Acetophenone	lb.	—	—
Anthranilate	lb.	2.20	2.35
Paracresol	lb.	—	—
Salicylate, U.S.P.	lb.	.35	.40
Musk Ambrette	lb.	4.00	4.45
Ketone	lb.	4.15	4.60
Xylol	lb.	1.40	1.80
Phenylacetaldehyde	lb.	5.00	6.00
Phenylacetic Acid	lb.	1.85	1.90
Phenylethyl Alcohol	lb.	2.10	2.50
Rhodinol	lb.	—	—
Safrol	lb.	2.25	2.45
Terpineol, C.P., drs.	lb.	.40	—
Cans	lb.	.43	—
Terpinyl Acetate, 25 lb. cans	lb.	.87	—
Thymol, U.S.P.	lb.	3.00	Nom.
Vanillin, U.S.P.	lb.	2.35	2.75
Yara Yara	lb.	1.80	1.85

Insecticide Materials

Insect Powder, bbls.	lb.	.29	.30
Pyrethrum Extract			
20 to 1	gal.	5.90	6.00
30 to 1	gal.	8.85	9.00
Derris, powder—4%	lb.	.32	—
Derris, powder—5%	lb.	.35	—
Cube, powder—4%	lb.	.32	—
Cube, powder—5%	lb.	.35	—
Squill, red, dried	lb.	.85	1.00

Waxes

Bees, white	lb.	.61	—
African, bgs.	lb.	.49	—
Refined, yel.	lb.	.59	.60
Candelilla, bgs.	lb.	.38	—
Carnauba, No. 1, yellow	lb.	.88	.89
No. 2, N. C.	lb.	.84	.85
No. 3, Chalky	lb.	.77	.78
Ceresin, yellow	lb.	.13½	.18
Montan Wax, bags	lb.	.45	.46
Paraffin, ref., 125-130	lb.	.0520	.0560

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2. Do you seek improvement in (a) color ☐ (b) Flavor ☐ (c) Odor ☐
3. What standards, if any, do you have for the following properties in your final product?
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   (b) flavor .....
   (d) pH .....
   (e) ash .....

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PRODUCTION SECTION

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, Oil & Fat Industries.

Theories of Detergency

THE means by which soaps and detergents are able to remove soil from skin or other surfaces are complex—and authorities are by no means in complete agreement as to the action involved. The subject is covered briefly in the recent report of Drs. Lane and Blank of Harvard Medical School, prepared for the Committee on Cosmetics of the American Medical Association and published in the March 7, 1942, issue of the *Journal of the American Medical Association*. The authors refer specifically to three major papers* which have appeared on this subject in the course of the past 25 years, each of which lists an extensive bibliography.

"The earliest explanation of how soap removes oily substances," say Drs. Lane and Blank, "was that the alkali resulting from hydrolysis saponified the oils, thus making them water soluble. One still hears this explanation occasionally in spite of the fact that it was disproved some years ago. Saponification, i. e. the conversion of a glyceride into a soap and glycerin, takes place only when the fat is held at relatively high temperatures, in the presence of strong alkali, for long periods of time. None of these conditions apply to the customary cleansing with soap and water. Koppenhoefer** has recently shown that, in the presence of a much stronger alkali (saturated lime water in the liming of steer hides for leather manufacture) for long periods of time (five days) only the small phospholipid fraction of the epidermal lipids of steer hides is saponified. In cleansing our skins with soap and water we do not approach these conditions. If a soap should be used which had excess alkali, it might be possible that some of the free fatty acids of the natural skin fats would be neutralized; but the hydrolytic alkalinity of a neutral soap would not even do this and certainly it could not saponify any glycerides.

"If instead of solubilizing the oily soil in water by saponification it can be stably suspended for a short period of time, it then can be easily removed. Emulsification of a fat is such a process, and many of the present day theories of the mechanism of detergence are concerned with the factors which favor emulsification. In order that the oil may be emulsified in the water it is first necessary for the oil and water to come into contact with each other. This is not as simple as it might at first seem, and substances which aid in establishing such a contact are termed wetting agents.

"A complete review of the various theories of emulsification and wetting would lead too far afield into colloid and physical chemistry. They are concerned primarily with surface tension, interfacial tension, orientation of molecules into monomolecular layers, McBain's theory of colloidal micelles, sorption, adhesion tension and contact angles. These factors vary for the soaps which have different detergent qualities. Bartell† has recently discussed the mode of action of the new detergents and has considered many of these factors.

"An important property of all active detergents, as far as emulsification is concerned, is the presence of both a hydrophilic and a lipophilic radical in the molecule. The hydrophilic radical is attracted to the water, the lipophilic to the oil. Through some of the physicochemical phenomena that have been mentioned, this orientation of the detergent molecule aids in establishing contact between the water and the oily soil and in producing an emulsion of the soil in the detergent solu-

*McBain, J. W.: Colloid Chemistry of Soap, in Third Report on Colloid Chemistry, British Association for the Advancement of Science, 1920, pp. 2-31. Fall P. H.: Detergent Action of Soaps, **J. Physical Chem.** 31:801-849, 1927. Symposium: Wetting and Detergency, International Society of Leather Trades' Chemists, British Section, New York, Chemical Publishing Co., 1937.

Koppenhoefer, R. M.: The Lipids of Steer Hide: The Effect of Liming on the Lipids of Steer Hide, J. Am. Leather Chem. A. **32: 210-230, 1937.

†Bartell, F. E.: Wetting Agents, Indust. & Engin. Chem. **33**: 737-740, 1941.

tion. This results in the rupture of the skin-soil interface and the establishment of two new interfaces, namely skin-detergent solution and soil-detergent solution. Cleansing takes place as a result of replacement of the emulsified soil by excess of the detergent solution and finally by solutions containing smaller and smaller quantities of the detergent, i. e. rinsing.

"In soaps and also in many of the new detergents the lipophilic group is a hydrocarbon or slightly modified hydrocarbon group. In general the higher the molecular weight of the hydrocarbon group, the stronger its lipophilic properties. This may explain why soaps made from fatty acids of less than twelve carbon atoms are poor detergents. The hydrophilic groups of the more common detergents are as follows:

Soap: —COONa.

Sulfates: —OSO_3Na or —OSO_3H.

Sulfonates: —SO_3Na or —SO_3H.

"Explanations of the mechanism of the removal of the insoluble soils make use of some of these same physicochemical principles. On the whole, however, much less work has been done on this problem. Some of the early workers felt that the insoluble particles were mechanically held on the material to be cleaned by the oily soils. The work of Spring,‡ however, in which he thoroughly removed all oil from fabrics and then soiled them with oil free insoluble materials such as lamp black, disproved this point. He felt that a sorption compound was formed between the soil and the fabric and that detergent solutions acted by breaking this compound and replacing it with sorption compounds composed of soil and the solution, and fabric and solution. He found that it is extremely difficult to rinse all the detergent from a fabric. Later workers have actually determined the amount of soap adsorbed onto the fabrics under specified conditions.

"Because of the natural oily film on the surface of the skin, there is probably little opportunity to form solid-skin sorption compounds, and the belief of the earlier textile workers that insoluble soil is removed by removing the oily film which holds it to the fabric probably applies to the great majority of cases of skin cleansing, and the problem of removal of insoluble soil from the skin itself is probably seldom met. The observation of these textile workers, however, that the detergent is adsorbed to the fabric may be very important in consideration of the action of detergents on the skin. If, like fabrics, the skin adsorbs detergents, as it well might, then detergents cannot be completely rinsed from the skin with ordinary rinsing.

‡Spring, W.: Einige Beobachtungen über die Waschwirkng der Seifen, Kolloid Ztr. 4: 161-168, 1909; 6: 11-17, 109-111 and 164-168, 1910.

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Cold Scouring of Wool

By the use of synthetic detergents such as the "Igepons," wool can be scoured in the cold, resulting in an economy in steam, reduction in the tendency of the goods to yellow and to felt and shrink. The difference in maintenance of quality between the warm and cold scour,—the former made alkaline by the use of soap, the latter neutral, is more apparent in the case of low-quality materials such as shoddy, than when processing high-class goods. In such cases the advantages of synthetic detergents over soap are particularly striking. Cold scouring of piece goods is particularly applicable to mixed fabrics consisting of wool and artificial fibers such as rayon, especially if they are dyed and contain colored or white effects. Scouring in a neutral bath reduces the danger of bleeding. *Textile Colorist* 64, 198 (1942).

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Refining Tall Oil

Refined tall oil of improved color and clarity is obtained, and at the same time minor quantities of valuable constituents such as hydrocarbons and cyclic alcohols of the phytosterol group, are recovered, by treating the crude oil at or below 30° C. with sufficient sulfuric acid to precipitate only the coloring matter and cyclic alcohols. The resulting acid sludge is separated and the oil then washed with water and treated with fuller's earth. F. H. Gayer and C. E. Fawkes, to Continental Research Corp. U. S. Patent No. 2,223,850.

D-12 Proposes New Specs

New specifications for chip soap with rosin and a granulated (powdered) soap with rosin have just been proposed by B. S. Van Zile, secretary of committee D-12 of the American Society for Testing Materials, so that the ASTM specifications would be in line with new federal specifications. In general, the new specifications follow the lines of D-496 and D-498 except in chemical composition. For chip soap with rosin, the maximum moisture and volatile matter has been raised from 10 to 15 per cent; the maximum sum of free alkali or free acid, total matter insoluble in alcohol, and sodium chloride, has been raised from 4 to 12 per cent; the maximum free alkali has been raised from 0.2 to 0.5 per cent; the minimum anhydrous soap content has been lowered from 85 to 72 per cent; and the maximum rosin content has been set at 20 per cent. For powdered soap with rosin, the maximum moisture and volatile matter has been raised from 6 to 10 per cent; the maximum sum of free alkali or free acid, total matter insoluble in alcohol, and sodium chloride, has been raised from 4 to 14 per cent; the maximum free alkali has been raised from 0.2 to 0.5 per cent; the maximum residue retained on a No. 12 sieve has been raised from 1.5 to 2 per cent; the minimum anhydrous soap content has been lowered from 89 to 75 per cent, and the maximum rosin content has been set at 20 per cent.

—— • ——

Stability Characteristics

The keeping qualities of peanut, stearin and sunflower oils and of oleomargarine and Argentine beef tallow, are reported by the King-Roschen-Irwin method. Freshly pressed stearins exhibit varying resistance to oxidation. The greater the degree of turbidity, the greater the resistance at higher temperatures. This is ascribed to the sterilizing effect of the higher temperature which protects proteinous antioxidants from decomposition by enzymic or microbiological action. Juan G. Ro. Yalour and Emerico Szabo. *Technoquimica* (Buenos Aires) 1, No. 2, 26-9, 31.

First Quarter Fat Data

A NUMBER of interesting trends in oil and fat consumption are shown in figures released last month by the U. S. Bureau of the Census on factory production and consumption of animal and vegetable fats and oils. Stocks of many important soap making materials are currently lower than a year ago, with coconut oil and tallow particularly affected. Stocks of coconut oil on March 31, 1942, totaled only 135,790,000 lbs. as compared with 209,944,000 lbs. on the same date last year. Inedible tallow stocks as of March 31, 1942, were only 238,789,000 lbs. as against 291,825,000 lbs. on the same date in 1941.

Production and consumption figures also exhibit some rather disturbing implications for the soap maker. Only 45,392,000 lbs. of crude coconut oil were produced during the first 1942 quarter, a drop of almost 50 per cent from the previous year. Consumption of coconut oil dropped from 161,431,000 lbs. in the first 1941 quarter to 113,643,000 lbs. this year. It was in spite of this drop in use that stocks also declined. The tallow picture shows that 359,942,000 lbs. of inedible grades were consumed in the first quarter of 1942, a substantial increase over the 1941 first quarter consumption of 262,209,000 lbs. Consumption was far in excess of first quarter 1942 production which was 228,063,000 lbs. Some promise of relief, however, is shown in the growing output of soybean oil. Production of crude soybean oil totaled 188,805,000 lbs. in the first 1942 quarter, well above the total of 151,601,000 lbs. for the 1941 first quarter, and also exceeding 1942 first quarter consumption by about twenty million pounds.

Selected figures from the report relating to oils and fats of particular interest to the soap maker are shown in the accompanying table:

Study Acorns As Oil Source

Possibilities for the use of acorns as an emergency source of vegetable oils are being investigated at Pratt Institute, Brooklyn. In a statement, released by the National Farm Chemurgic Council, G. F. Kinney, head instructor in chemistry at the Institute, said the acorns from white and red oaks contain about 30 per cent oil, which can readily be extracted. He described the oil as reddish in color, of approximately the consistency of olive oil, having a nutty odor and a slightly bitter taste and similar to both cottonseed and peanut oils. "Since both the taste and color of acorn oil can be removed," said Mr. Kinney, "there should be ample outlets for it—obvious ones being in soap making, in hydrogenation processes and as a source of sulfonated oil." Results of the Pratt Institute investigations to date, he stated, are not conclusive and he emphasized that the whole project is strictly experimental, although possibilities are sufficiently encouraging for the experiments to be extended.

Soap from Hydrocarbons

To separate the unsaponified portion from soap obtained from the oxidation products of hydrocarbons, the whole is heated under pressure, then the unsaponified fraction is allowed to vaporize into an evacuated vessel kept at an elevated temperature. The soap is dropped onto a heated conveyor where the last traces of the unsaponified fraction vaporize. The process is more suitably carried out by two successive evaporations in two separate vessels. The preheated mixture is sprayed into the first vessel. Here the volatile components volatilize and the soap falls into a second vessel, whence it is picked up on a heated conveyor on which the remaining unsaponified constituents are removed. Markische Seifen-Industrie. German Patent No. 704,428, 706,951.

Myristic Acid Separation

A method of fractionating a mixture of fatty acids consists in subjecting the mixture to an adsorption operation by surface-active substances having a selective action. The quantity of the surface-active substances is always a multiple of that of the fatty acids. Among examples, a mixture of myristic and stearic acids in the proportion of 1:1 is dissolved in 10 parts of benzene and the solution is filtered through alumina cream. The filtrate contains pure myristic acid. Hans P. Kaufmann. French Patent No. 853,065.

FIRST QUARTER 1942 FAT AND OIL DATA

Oil or Fat	*Factory operations for the quarter ending March 31*				*Factory and warehouse stocks March 31*	
	Production (1,000 *pounds*)		*Consumption* (1,000 *pounds*)		(1,000 *pounds*)	
	1942	1941	1942	1941	1942	1941
Crude coconut	45,392	86,251	113,643	161,431	135,790	209,944
Crude soybean	188,805	151,601	168,233	132,753	86,231	59,290
Olive oil foots	———	———	1,537	4,334	12,667	17,264
Crude palm oil	———	———	62,614	59,108	123,216	143,788
Crude babassu oil	———	15,788	8,314	13,484	15,032	11,845
Inedible tallow	228,063	183,472	359,942	262,209	238,789	291,825
White grease	37,371	30,423	31,409	30,458	15,336	41,827
Yellow grease	33,906	30,682	63,573	42,676	49,247	48,884
Brown grease	25,378	21,000	12,252	15,952	12,349	14,053
Fatty acids	43,749	38,375	35,065	24,458	12,272	10,269
Fatty acids, distilled	15,623	11,011	10,874	6,597	11,046	6,592
Red oil	20,223	15,610	12,114	11,316	10,571	6,336
Stearic acid	14,439	12,359	5,751	4,658	8,661	4,996
Glycerin, crude 80% basis	61,953	56,049	63,671	57,989	16,346	21,339
Glycerin, dynamite	29,548	20,179	13,970	12,893	26,047	27,397
Glycerin, chemically pure	18,604	24,259	9,243	9,779	27,708	28,266
Cottonseed foots 50% basis	47,374	43,884	47,398	37,158	28,258	23,217
Cottonseed foots, distilled	7,912	7,745	5,948	5,660	2,390	2,197
Other vegetable oil foots, 50% basis	31,449	23,833	23,516	14,978	4,307	3,543
Acidulated soap stock	22,175	13,812	12,275	14,679	31,623	26,866
Miscellaneous soap stock	666	335	809	435	2,048	1,321

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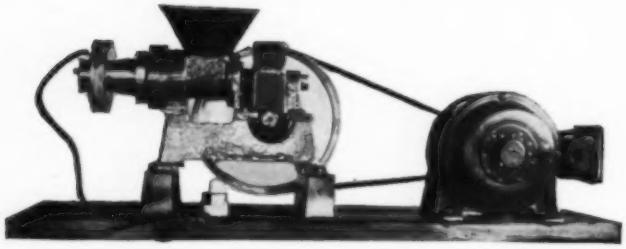
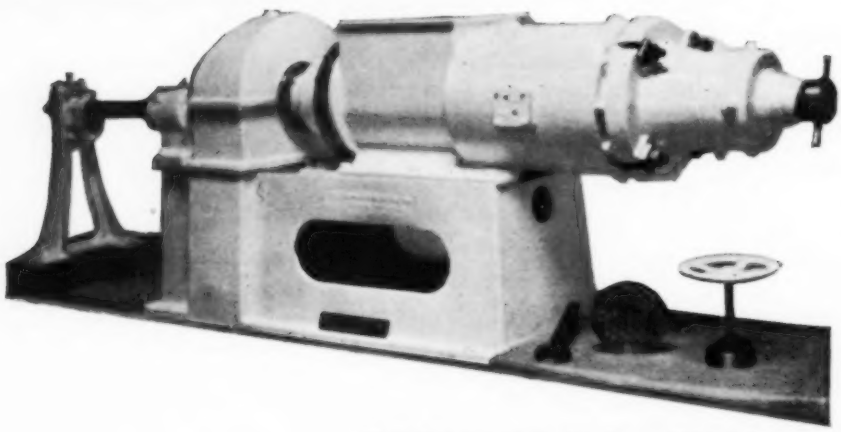


For making sample cakes of soap by soap, perfume and color manufacturers. This small plodder has a 2½" bronze screw, plated front head, screen and plate holder and an electric heater.



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Dispersing Agent Studies

A proprietary product, the sodium salt of alkyl-aryl sulfonic acid of controlled chain length, has been demonstrated to be an excellent dispersing agent. Dispersion of solid matter is shown by comparing suspensions of iron oxide in water alone and in a solution of the dispersing agent. When the two suspensions are shaken and allowed to stand for a few seconds, the true color of the iron oxide pigment is the color shown by the dispersed suspension. After standing for a while, it will be noted that the suspension without the dispersing agent shows noticeable settling.

Although true dispersing agents are not detergents, it was decided to find out whether the sodium salt of an aryl-alkyl sulfonic acid could be substituted for soap and other cleaning agents used in commercial laundry work. After preliminary laboratory tests, intensive tests were conducted for about six months in a large commercial laundry. A mixture of soap, certain other commercial cleaning agents, and the purified form of the dispersing agent was found to be more effective in washing clothes than any other known commercial combination. However, this combination offered no economy over the materials commonly in use. Where fats are at a premium, it might be of more interest.

The function of the dispersing agent in laundering is not to remove dirt from the clothes, but to prevent it from redepositing on the fabric. This problem of redeposition is a not uncommon phenonenon in laundries and has caused a great deal of trouble.

Another application for this type of compound is the emulsification of kerosene and water. Two 25 per cent kerosene emulsions,—one made with 1 per cent of dispersing agent, the other with 15 per cent of triethanolamine oleate,—look very much alike. When dilute hydrochloric acid is poured into the soap emulsion, there is immediate breaking with subsequent formation of a continuous oil phase. When acid is added to the emulsion made with the dispersing agent, no apparent change takes place. This indicates the unusual stability of such emulsions. Emulsions made with the same dispersing agent can be boiled, frozen, and thawed out without losing their stability.

Many applications are possible, as in the suspension of sulfur in agricultural sprays of fungicides, dispersion of clays, of dyes, use in leather dressings, and in many other unrelated fields. A. G. Richards. *Am. Dyestuff Reporter* 31, P186-190 (1942).

◆

Glycerine Processing

Glycerine-containing materials of the class consisting of acidified soap lyes, acidified soap lye crudes, and acidified residues, are extracted before glycerine recovery, at pH 3-4, with a fatty material consisting of water-insoluble triglycerides and fatty acids having a molecular weight higher than that of the fatty acids in the acidified material. A suitable fatty material which does not dissolve glycerine is a liquid mixture of palmitic, oleic, and linoleic acids. Ralph H. Potts, La Grange, and Edwin W. Colt, to Armour & Co. Canadian Patent No. 404,493.

◆

Fatty Alcohol Substitutes

Hydroaromatic hydroxy compounds which are alkylated in the nucleus and generally correspond to the formula RR'OH are used as substitutes for fatty alcohols. R is an aliphatic hydrocarbon radical of at least five carbon atoms, and R' a cyclohexyl or decahydronaphthyl residue, which may also be substituted. These compounds are successfully used in soap, wax, polishing compounds, pastes, shoe polish, disinfectants etc. Winfrid Hentrich and Carl A. Lainau, to Henkel & Cie G.m.b.H. German Patent No. 681,782.

◆

Cleaning Raw Wool

Raw wool is saturated with a fatty acid such as oleic, lauric, palmitic, stearic, or a mixture. The wool is kept so until the impurities such as pitch are permeated with the fatty acid. The excess acid is squeezed out and the fatty acid remaining in the wool is saponified by the usual means, and the wool washed clean. Ehrhart Franz. German Patent No. 706,653; through *Chem. Abs.*

Fatty Acid Separation

The mixed fatty acids from soybean oil are converted into hydroxamic acids and these are extracted at 0° C. with alcohol, ether, carbon tetrachloride, and light petroleum. The oil contains 12-3-13.6 per cent of saturated acids as glycerides.

The mixed ether esters of fatty acids from coconut oil are converted into hydroxamic acids. An alcoholic solution of the mixture is diluted until it contains 15 per cent of alcohol. After keeping at room temperature for some time the insoluble and soluble fractions are converted into free fatty acids. The insoluble portion contains nonvolatile, high-molecular acids, and the soluble portion steam-volatile, low-molecular acids. Y. Inouye, H. Yukawa, and H. Katsumata. *J. Agric. Chem. Soc. Japan*, 17, 491-4; through *Brit. Chem. and Physiol. Abs.* 1942, 21.

◆

Purifying Oils

An apparatus for purifying crude oils such as castor, olive, linseed or petroleum oils consists of a vertically disposed chamber. The inlet for the purifying solution is arranged to effect a substantially uniform distribution of the solution within the chamber. Between the inlets for the oil and the purifying solution there is an upwardly convex permeable means for supporting nails for effecting subdivision of the rising oil. Ivor M. Colbeth. British Patent No. 534,338; through *Chem. Abs.*

◆

Analysis of Wetting Agents

Pure wetting agents are obtained from the commercial products by prolonged extraction with dioxan or ethyl acetate. The determination of moisture, nitrogen and sulfur, and the iodine value of the sodium salt of oleyl-*N*-methyltaurine is described. Esters may be determined by saponification value, and sodium alkyl sulfates by hydrolysis with dilute hydrochloric acid, extraction with ether, and determination of sulfate ion in the aqueous layer. Salt formation with benzidine cannot be applied quantitatively. G. V. Shirolkar and K. Venkataraman. *J. Indian Chem. Soc., Ind. Ed.*, 4, 61-71.

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PRODUCTS AND PROCESSES

Milk Bottle Cleaner

A detergent for cleaning milk bottles possessing improved flocculating power, comprises an aqueous solution of an inorganic detergent alkali salt, such as caustic soda and/or trisodium phosphate, sodium metasilicate, together with 1-3 per cent of sodium aluminate and 0.1-0.25 per cent of magnesium sulfate. H. A. H. Crowther and Industrial & Commercial Detergents, Ltd. British Patent No. 540,528.

Soap-Alcohol Mixtures

Naturally occurring esters of high molecular unsaturated alcohols and higher fatty acids are treated with sulfuric acid and the product is hydrolyzed. The resulting hydroxy ester is subsequently saponified. Deutsche Hydrierwerke A.-G. German Patent No. 681,225.

Hand-protecting Cream

Much more important now that women are going more into factory work are the products used to coat the hands to prevent imbedding of soil and grit in the skin. Such products serve as barriers to the deep penetration of dirt and grease, and permit easy removal by simple cleaning methods. Such a special cream must leave a film not easily removed, but substantially invisible.

The vanishing-cream base is the standard, with either stearic acid containing a small amount of lanolin, cocoa butter, cetyl alcohol, or other skin softening ingredients. Enough glycerine or one of its substitutes such as the ethyl ether of diethylene glycol or sorbitol should be present to assure freedom from rolling. A preferred emulsifying agent with stearic acid is amino glycol. The barrier is a soft, flaky solid such as talc or magnesium or zinc stearate. The cream is formulated in the usual way with somewhat more than the ordinary quantity of water. The solid powder is then milled into the cream. A suggested formula follows:

	Per Cent
Stearic acid	14
Lanolin	3
Glycerine	8
Amino glycol	1
Water	58.5
Magnesium stearate	15
Perfume	0.5

Joseph Kalish. *Drug & Cosmetic Ind.* 50, 278 (1942).

Anhydrous Sulfonates

Substantially anhydrous sulfonated materials are prepared by dispersing a crude sulfonation mass in an organic solvent, the volume of which is at least equal to that of the sulfonated mass, and neutralizing the sulfonated material. The inorganic salts precipitated by the neutralization are separated, and the solvent as well as the residual moisture removed by distillation. National Oil Products Co. French Patent No. 852,588.

Saponifying Agent

Raw fats, glycerides or fatty acids are saponified with a mixture of caustic potash and alkali hypochlorite. The saponification is started at a temperature of approximately 40° C. and is gradually raised to 80-100° C. Deutsche Solvay-Werke A.-G. German Patent No. 704,880.

Sulfonium Compounds

A mixture of sulfuric acid or a sulfonic acid, a saturated primary alcohol, and a thio ether are heated together at 100-200° C. These sulfonium compounds are valuable emulsifying agents. A. J. van Peski and J. M. Hoeffelman. German Patent No. 705,224.

Hypochlorite Detergent

The detergent contains stable calcium hypochlorite, sodium carbonate in a quantity above that necessary to react with all the calcium present in the detergent, and a water-soluble organic detergent salt which does not form a precipitate in the presence of calcium ions. Mathieson Alkali Works. French Patent No. 852,048.

Ketone Sulfonation Products

Cleansing and dispersing agents are obtained by introducing into aliphatic ketones containing 11-17 carbon atoms, sulfonyl groups linked directly, or through the intermediary of a sulfur atom to a carbon atom. I. G. Farbenind. A.-G. French Patent No. 850,753.

Sulfonated Detergents

Sulfonic acids or sulfonates of aromatic dicarboxylic acids are caused to react with alcohols containing more than two hydroxyl groups. Valuable technical products are obtained from sulfophthalic acid, sulfoterephthalic acid, disulfophthalic acid, sulfonaphthalic acid, etc. Societe pour l'industrie chimique a Bale. German Patent No. 705,356.

Imidazoline Agents

Imidazoline substituted in the 2-position by a high molecular radical of at least 10 carbon atoms, is condensed with an aliphatic or araliphatic halo sulfonate such as bromoethanolsulfonic acid. The products are valuable cleaning and dispersing agents. I. G. Farbenind. A.-G. German Patent No. 705,132.

Drying Sulfonates

Drying a commercial wetting agent, the sodium salt of a long-chain alkyl benzene sulfonic acid, at pH 10.1, gave a flaky product with low moisture content, while at pH 2.4 an undesirable product was obtained. R. A. Fisher and H. N. Nix. *Virginia J. Sci.* 2, 195.

Peroxide Added to Phosphate

The per compounds and the water-soluble phosphates with less water than orthophosphoric acid, are effectively substituted by addition products of hydrogen peroxide on alkali pyrophosphate. Otto Lind, to Henkel & Cie. G.m.b.H. German Patent No. 707,120; through *Chem. Abs.*

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Alumina	11.28	10.61
Iron Oxide	.86	1.57
Titanium Oxide	.06	.10
Calcium Oxide	.80	1.10
Magnesium Oxide	.36	.40
Soda	3.64	3.03
Potash	4.38	5.58
Sulfuric Anhydride	.03	.05
Loss on ignition	5.20	4.04

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No. 2,279,248, Detergent, patented April 7, 1942 by William Beach Pratt, Boston; Annette Harris Pratt, administratrix of said William Beach Pratt, deceased. A readily water-soluble dry detergent composition which is stable when dry comprising a water-soluble alkali metal fatty acid soap having included therein minute particles of formic acid forming in the aggregate a minor proportion by weight of the composition, such formic acid not substantially exceeding the weight of formic acid resulting from oxidation to acid of a weight of formaldehyde equal to 2 per cent of the weight of the soap and being insufficient in amount to precipitate the soap but sufficient in amount relative to the soap to at least measurably lower the pH value of an aqueous solution of the composition below the pH value of an aqueous solution of such soap alone when both aqueous solutions are of like concentration, the composition being devoid of formaldehyde and of free alkali.

No. 2,279,314, Detergent, patented April 14, 1942 by Lloyd F. Henderson and Bernard L. Maxwell, Reading, Mass., assignors to Lever Bros. Co. A non-soap detergent composition of matter comprising a non-soap detergent active ingredient selected from the group consisting of higher fatty sulfonated amides and higher fatty isethionates, tetrasodium pyrophosphate to impart a slippery feel to a solution containing the composition in a concentration ordinarily used in detergent operations, and an acid salt to impart to the solution of the composition a pH value of not over 7.

No. 2,279,532, Cleaning Composition, patented April 14, 1942 by Harry A. Seran, Cucuta, Colombia. A composition of matter adapted for the cleaning of fabric articles comprising the following ingredients in substantially the proportions:

	Parts by weight
Phosphorus sesquisulphide	4½
Potassium chlorate	10
Iron oxide	5
Zinc oxide	3
Glass powder	7½
Glue	10
Water	20
Asbestos	40

No. 2,279,800, Insecticide, patented April 14, 1942 by William P. ter Horst, Packanack Lake, N. J., assignor, by mesne assignments, to United States Rubber Co., New York. An insecticide preparation containing an insecticide derived from a member of the class consisting of derris root, derris powder, timbo root, cube root, pyrethrum flowers, and as a stabilizer therefor a condensation product of an aliphatic ketone with a secondary aromatic amine.

No. 2,280,373, Machine for Cutting Soap, patented April 21, 1942 by James D. Chaney, Jersey City, N. J. Apparatus for cutting a bar of soap into blanks of equal length, the apparatus comprising a support including guide means to support the bar for longitudinal movement along the support, friction rollers on the support for engaging opposite sides of the bar, actuating means operating some of the rollers for imparting longitudinal movement to the bar, opposed cutting units located beyond the friction rollers and on opposite sides of the guide means, the cutting units comprising respective blades which are constantly opposed in alignment, operating mechanisms imparting reciprocating motion to the blades, and drive means operatively connected to synchronously operate the actuating means and the operating mechanisms, the drive means comprising an electric motor, a variable rheostat connected between the motor and a source of electric current, governor mechanism operatively connected to the rheostat, the governor mechanism including friction operated rollers engaged with and driven by the bar of soap in its longitudinal movement.

No. 2,281,239, Insecticide, patented April 28, 1942 by Henry B. Hass, West Lafayette, Inc., assignor to Purdue Research Foundation, Lafayette, Ind. An insecticidal composition comprising a lower 1, 1-dichloro-1-nitroalkane.

No. 2,281,249, Germicidal Concentrate, patented April 28, 1942 by Luther S. Roehm, Midland, Mich., assignor to Dow Chemical Co., Midland, Mich. A composition comprising 24 parts by weight of ortho-phenyl phenyl dissolved in from 36 to 136 parts by weight of a liquid partially neutralized sulphonated oil selected from the group consisting of castor and sperm oils, and which in 5 per cent aqueous solution has a pH above 7.0.

No. 2,281,534, Method and Apparatus for Hydrolyzing Fats and Oil, patented April 28, 1942 by Warren Davey, Montclair, and Martin Hill Ittner, Jersey City, N. J., assignors to Colgate - Palmolive - Peet Co., Jersey City, N. J. The process of producing fatty acids and concentrated glycerine which comprises hydrolyzing fats or oils under super-atmospheric pressure and at an elevated temperature, separately removing fatty acids containing some dissolved water and a glycerine-water solution from the hydrolyzing chamber, utilizing a portion of the heat in the fatty acid-water mixture to generate steam under pressure, preheating the oil or fat before introduction into the hydrolyzing chamber with at least a portion of the steam so generated, employing a portion of the steam for producing a vacuum, flashing the glycerine-water solution to evaporate a portion of the water therefrom as steam under pressure, utilizing a further portion of the heat in the outcoming fatty acids-water mixture to further evaporate water from the glycerine-water solution as steam under pressure, preheating the water before introduction into the hydrolyzing chamber with a portion of the steam generated from the glycerine-water solution at a lower pressure, flashing the partially concentrated glycerine-water solution to evaporate a portion of the water therein, and using a portion of the heat remaining in the fatty acids-water mixture to further evaporate water from the concentrated glycerine-water solution at the lower pressure, the evaporation of water from the concentrated glycerine solution being further assisted by reducing the pressure thereon below atmospheric.

Tallow Splitting

Tallow is 95 per cent hydrolyzed by 1 per cent of Twitchell's reagent in 24 hours, the naphthalene reagent being best. A trace of sulfuric acid is essential. Removal of glycerine in the later stages shortens the reaction time. S. N. Basu. *J. Indian Chem. Soc., Ind. Ed.* 4, 113-19.

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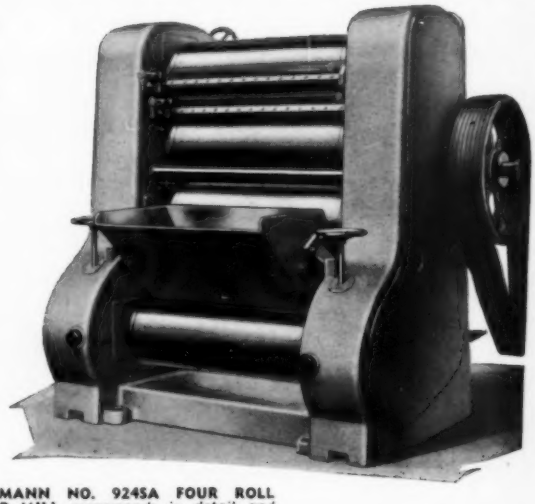

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Peroxide-Hypochlorite Bleaching

Special precautions have to be taken in bleaching white fabrics such as cotton knit goods, especially where a combination of peroxide and hypochlorite is used. Soft water is employed in the machine at about 110°F., to which a good wetting agent is added before the pieces are put in. When the fabric is thoroughly wet out, add 1½-2 per cent of peroxide, bring this bath slowly to 190°F. and maintain at this temperature for about one hour. After a warm and cold rinse, ordinary chlorine bleach is added and the goods run at about 110°F. for another hour. A cold rinse follows, then another cold rinse containing 1 per cent of sodium bisulfite. E. S. Dunlap. *Textile World* 92, No. 4, 94-5 (1942).

Soap Titration Curves

Vishnyakov and Rodicheva (*J. Applied Chem., U.R.S.S.* 13, 1517) recommended preparing titration curves of soap solutions to secure proximate analysis. Four maxima in the titration curves represented neutralization of the alkali formed on hydrolysis of the soap, change of neutral soap to acidic soap, decomposition of acidic soap, and finally decomposition of sodium carbonate and sodium bicarbonate. M. M. Piskur. *Oil & Soap* 19, 76 (1942).

The electrical conductivity of oleate soap was found to be 5-10 times as great as that of equimolar solutions of stearate soap, owing to the difference in the degree of dispersion (Angelescu and Woinarosky, *Kolloid-Z.* 92, 355.

Sour Conservation in Laundry

Since washing sours are currently in short supply, economy in their use is essential. To conserve stocks and still maintain whiteness at the highest possible point, the following rules should be applied:

1. Rinse to within 0.5 pH of the tap-water pH before souring.
2. Be sure that rinsing is adequate for the type of alkali you are using.
3. Sour to a pH range of 4.0-5.5.
4. Make souring the last operation.
5. Store sour supply where it will not absorb water from the air.

John W. Chamberlin. *The Launderyman*, April 7-8 (1942).

Adsorption Method

A method of purifying oils and fats consists in causing them to pass through materials having a selective adsorbing action, separating the constituents adsorbed by the materials, purifying them and adding to the filtrate (the nonadsorbed part of the fatty substances). Hans P. Kaufmann. French Patent No. 853,066.

Refining Oils by Radiation

The oil or fat is subjected to a preliminary refining treatment, then to the action of radiant energy having a wave length of less than 0.535 micron to reduce the dispersion of the colloidal material in the oil or fat. The oil or fat is subsequently refined. The remaining colloidal material of reduced dispersion is removed. Anderson, Clayton & Co. British Patent No. 537,682.

Fungicide

A fungicidal preparation contains as its active ingredient a diamino diaryl methane. Wm. P. ter Horst, to Dominion Rubber Co., Ltd. Canadian Patent No. 403,798.

Calcium Hypochlorite

A granular, dustless calcium hypochlorite is free from a binding agent, other than water in an amount sufficient to exert an effective binding action. The granules are free from minus 100-mesh particles and have sufficient cohesiveness to resist substantial disintegration. They are produced by drying aggregates formed from a mass consisting of solid components of the product and enough water and air to render the mass plastic. The product contains not more than 2 per cent of calcium hydroxide, not more than 1.5 per cent of calcium chloride, and not more than 1 per cent of water. H. L. Robson and G. A. Petroe, to Mathieson Alkali Works. Canadian Patent No. 404,279.

Rosin Soap Larvicide

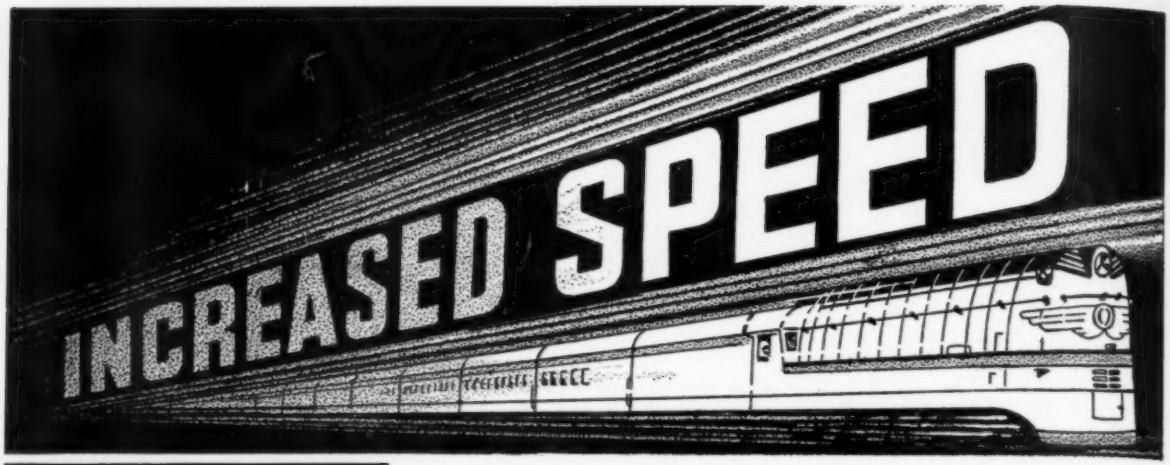
A larvicide contains a rosin soap impregnated with kerosene; at least one of the group consisting of water-gas tar, tar-acid oil and light creosote oil; at least one of the group consisting of motor oil and bunker carbon-gas oil. The selections from the groups are combined in a state of partial emulsification. Castor oil is also combined with the mixture. Walter D. Martin. U. S. Patent No. 2,258,390.

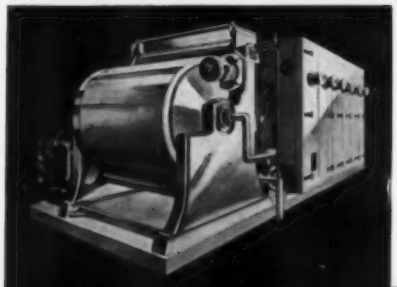
Rotproofing

Good results in rotproofing sandbags have been obtained with a combination of 20 per cent of creosote, plus copper naphthenate giving 0.5 per cent of copper. The tar compound, besides being toxic, exerts a water-proofing effect in delaying the loss of copper by leaching. E. F. Armstrong. *Textile Manufacturer;* through *Textile Colorist* 64, 196-8 (1942).

Deoiling Palm Fruits

The oil residues remaining in palm fruits or fibers after a deoiling operation are removed by triturating the mass in the presence of water and heat, decanting the liberated oil floating on the surface and separating the layer by admission of water, for which a device is described. Duchscher & Co. French Patent No. 852,387.





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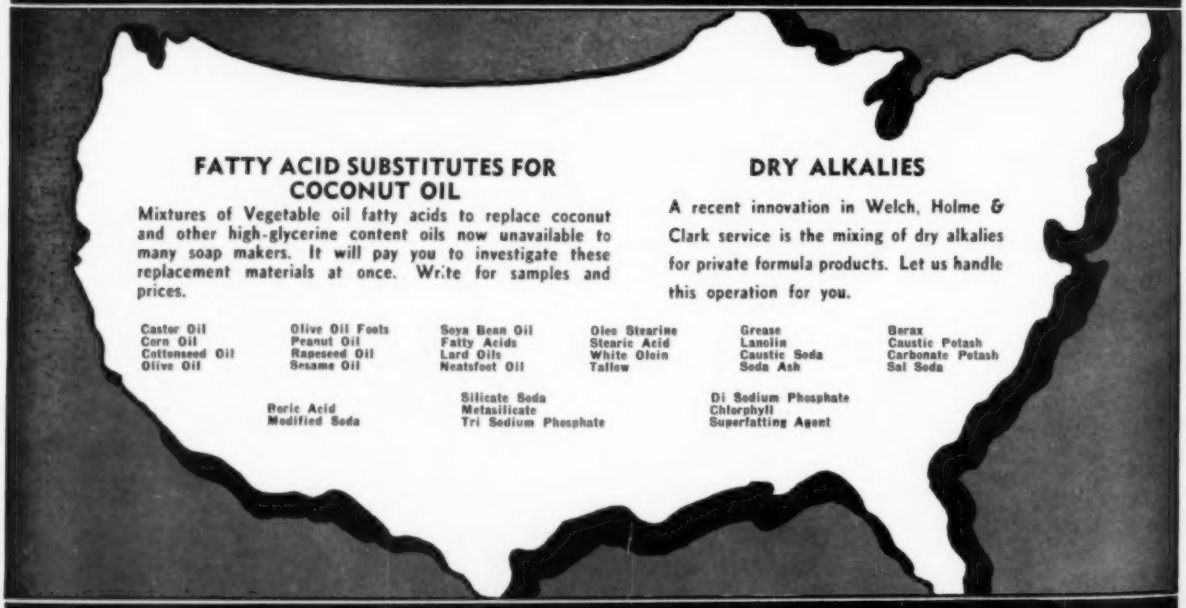

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879—Rotary Pumps

"Facts About Rotary Pumps," a new bulletin, No. 301, of Blackmer Pump Co., Grand Rapids, Mich., is currently being distributed to the trade. Single pump units, twin units, multiple units, belt driven pumps, hand pumps, direct-connected pumps, steam turbine drive, and other units in the Blackmer line are pictured and described. Diagrams are presented to show the operating cycle of the pumps.

880—Mixing Equipment

American Machine & Foundry Co., New York, has just published a new eight-page bulletin "Flexibility in Mixing Operations" which describes its line of "AMF Glen Mixers," using the planetary mixing principle, equipped with variable speed and interchangeable agitators and portable bowls, ranging in capacity from 10 to 85 gallons.

881—Industry Management

Bedaux Co., New York, has just brought out a 16-page booklet, "More Production, Better Morale," which discusses the part scientific management plays in bringing about increases in production. Proper planning and scheduling of operations, job evaluation and classification, plant layout, training of supervisors and workers, control of maintenance and repair operations, and control of costs, are discussed on the basis of time and motion studies.

882—Mathieson 50-Year Book

Commemorating its 50th anniversary, Mathieson Alkali Works, New York, has just published a 48-page booklet entitled "Fifty Years of Chemical Progress." The booklet traces the growth of the Mathieson organization and describes the company's major developments, including the introduction of liquid chlorine and synthetic ammonia, the preparation of new chlorine carriers, bleaching agents and detergents, and the production of alkalies of a high degree of purity. Numerous illustrations show the scope of the company's operations.

883—pH Testing

The Cargille Buffer Set No. 1, for judging quickly the pH of any sample to within approximately 0.5 pH unit, is currently being offered by R. P. Cargille, New York. The set contains 17 buffer tablets, which when dissolved as directed, provide 17 solutions of known pH value. These solutions are compared with samples of unknown pH on "Hydrion" wide range pH test paper.

884—Floor Maintenance

A reference book of Washburn floor finishes, sealers, and waxes, which gives suggestions for use and application for best results has just been brought out by T. F. Washburn Co., Chicago. Entitled "Modern Floor Maintenance," the 16-page book gives information on heavy duty self-polishing floor finish, wax maintainer, gym cleaner, self-polishing wax.

885—Drum Carrier

A new "Ernst Drum and Barrel Carrier," recently brought out by Ernst Magic Carrier Sales Co., Buffalo, N. Y., is designed to handle light wood, fiber, paper barrels, and "one-trip" light gauge steel containers with or without chimes. Carrier has a vertical lift and a capacity of 800 pounds.

886—Verley Price List

The new wholesale price list of Albert Verley & Co., Chicago, attractively bound and illustrated, includes data on the perfuming of toilet soaps and suggestions for the proper aging and care of perfume as well as prices and descriptions on the Albert Verley line of synthetic aromatic products, organic isolates, synthetic flower oils and aromatic bases, and suggestions for the popular basic odors.

887—Babassu Possibilities

A preliminary report reviewing some of the long term possibilities for development of the babassu industry of South America has just been issued by John B. Gordon, Bureau of Raw Materials for the American Vegetable Oils and Fats Industries, following his return from South America where he served as a member of an official Government commission to study the oil and fat production and supply situation. The report may be obtained by addressing Mr. Gordon at 1251 National Press Bldg., Washington, D. C.

888—OPA Price Ceiling Guide

The Office of Price Administration has issued a comprehensive guide book dealing with the new price ceiling law under the title, "What Every Retailer Should Know About the General Maximum Price Regulation." It explains the essential features of retail price control and also gives instructions as to determination of ceilings.

Rosin Production Data

Production of gum and wood rosin in the United States totalled 2,135,593 barrels of 500 pounds each during the period April 1, 1941, to March 31, 1942, according to figures just released by the Bureau of Foreign and Domestic Commerce. This compares with 2,145,865 barrels in the preceding year. Domestic consumption during the year ended March 31, 1942, amounted to 2,575,076 barrels, this excess over production cutting stocks as of March 31, 1942, to 1,434,677 barrels. Consumption of rosin by the soap industry was reported as 251,368 barrels during the period under review. Manufacturers of disinfectants and insecticides used 5,600 barrels, while manufacturers of shoe polish and shoe materials used 12,151 barrels.

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War Time Soap Problems

(*From Page 26*)

true that distilled fatty acids of various characteristics are offered in the market by custom distillers, some of whom are not competitors in the soap field and some of whom are themselves manufacturers of soaps. The profits from distillation of low-grade materials are considerable and are obviously gained by the distiller, whether or not he is the ultimate consumer of the distilled acids in soap manufacture.

The processing involved in manufacture of high grade soap materials from low grade fats, oils and greases and from the soapstock wastes of edible oil refineries is simple. The raw material is first hydrolyzed by autoclave or Twitchell methods, the glycerine so separated is recovered and the fatty acids after washing and settling, are distilled and condensed. Condensation may be total or fractional. By means of fractional condensation an approximation of pure single fatty acids of definite types and characteristics can be obtained. All of the fatty acid products of distillation are light in color, regardless of dark color in the raw material or of darkening in the autoclave or Twitchell hydrolysis.

The old type of batch or semi-continuous fatty acid still known as the "pot" still, was a cumbersome, dangerous piece of equipment, expensive to operate and producing large quantities of by product "candle pitch" of relatively low value. The production of prime quality distilled fatty acids in quantity in such stills generally required double distillation and overall operating losses were considerable.

Within the past six or seven years several truly continuous fatty acid stills have been developed in the United States, all of them employing the distilling column or "bubble tower" principle. In these plants, the raw material charge is heated while in transit to the distilling column, the fatty acids are vaporized in the column, pass through overhead vapor pipes to condensers where they are cooled, condensed and collected.

The principles of design of the various continuous fatty acid distillation plants are essentially the same, variations being found only in methods of application of heat to the charge and of condensing. The development of fractionation, or fractional condensation, has resulted in production of several new types of product, not representing the total fatty acids of any natural oil or fat but, in most instances, not yet being 100 per cent pure examples of single fatty acids.

Since only a single distillation is required in most of the modern continuous plants, pitch production and operating losses are both low in amount. The operating costs in most instances are considerably lower than those of the old type "pot" stills and the products far superior in quantity.

In summary, fortunate indeed today is the lot of the soapmaker whose plant includes fat refining and bleaching equipment, an autoclave or Twitchell hydrolysis plant, and modern continuous distillation equipment.

—— • ——

Saddle Soaps

(*From Page 31*)

ture of wax and turpentine and a little ammonia soap: 100 parts of soft soap; 80 parts mixed waxes, e.g., ceresine, beeswax and paraffin wax; 40 parts turpentine; 10 parts ammonia soap.

The use of triethanolamine is recommended as an addition to saddle soap compositions as it greatly increases the scouring or cleansing action of the soap and helps to leave the grain with a smooth, silky feel. The cost of this additive is, however, the chief reason why it is absent from most working formulae. Experiments with colloidal clays are encouraging and they can be recommended as safe additives, tending to act as fillers and so rendering leather less porous and better able to take a good polish. These clays also smooth down the roughness of the flesh side of the leather and, in the case of officers' Sam Browne belts, render it less liable to wear or mark the tunic. It is important to remember that saddle soaps are applied not only to the grain of the leather for removal of grease, deposits of dirt, etc., but also to the flesh side for the reason mentioned above.

In Germany solvent soaps are quite frequently crutched in with a suitable base soap to make proprietary saddle soaps and these also contain various additives, particularly waxes and Kaolin and glycerine or glycol. Sodium naphthenate has been suggested as an ingredient of saddle soaps because of its alleged insecticidal properties and mild scouring ability. There are also various glycol soaps, as well as soaps of triethanolamine and the soapless detergents and many of these could well be employed if they were cheaper. It has, however, to be remembered that to produce an economical product the simpler the ingredients the better the chance of success and a straight palm oil rosin soap containing a little free alkali will generally meet all practical requirements.

—— • ——

Study of Bactericidal Action

The bactericidal and bacteriostatic properties of the following commercial surface-active agents were studied:

	Chemical Name
Aerosol OT	Dioctyl sodium sulfosuccinate
Aerosol AY	Diamyl sodium sulfosuccinate
Aerosol MA	Dihexyl sodium sulfosuccinate
Tergitol 4	Sodium tetradecyl sulfate
Tergitol 4T	Triethanolamine tetradecyl sulfate
Tergitol 08	Sodium octyl sulfate
Triton K-12	Cetyl dimethyl benzyl ammonium chloride
Nopco DLN	High SO_3 sulfonated oil

Triton K-12 is a carbon-active compound, the rest of the compounds being anion-active.

Fresh 1 per cent solutions of the agents were made, and the surface tension of each determined. Values ranged in all cases from 26 to 31 dynes per cm. at 25° C. The effect of pH was studied by adjusting the values of the solutions over a pH range of 4 to 9. Four agents at pH 4 to 9 were tested against *Staphylococcus aureus* and *Eberthella typhi* so that a comparison could be made between the effect on a Gram-positive and a Gram-negative organism. Sterility, bacteriostatic, and bactericidal tests were made by the F.D.A. Phenol Coefficient Method.

The tabulated results show that reduced surface tension alone does not

explain the bactericidal action of a surface-active agent. Bactericidal action is a combination of three favorable factors, each affecting the others, namely, anionic or cationic nature of the compound, pH of the solution, Gram-positive or Gram-negative nature of the organism.

The bactericidal action of both anionic and cationic compounds is markedly influenced by hydrogen-ion concentration. The cation-active compound, Triton K-12, exhibited its greatest efficiency in the alkaline range; the higher the pH, the more efficient its bactericidal action. The anion-active agents, Aerosol OT and Tergitol 4 and 4T, exhibited greatest bactericidal efficiency in the acid range; the lower the pH the more efficient the product.

The cation-active agent, Triton K-12, was generally speaking more effective against *Eberthella typhi*, a Gram-negative organism, than against *Staphylococcus aureus*, a Gram-positive organism. The anion-active agents were more effective against *Staphylococcus aureus* than against *Eberthella typhi*.

Nopco DLN and Tergitol 08 did not reveal bactericidal action. Surface activity in a compound therefore appears to be independent of any bactericidal properties it may have. The difference in bactericidal action of the various compounds probably relates to differences in chemical structure. Louis Gershenfeld and Vera E. Milanick. Am. J. Pharm. 113, 306-26 (1941).

◆

Report on Termite Study

The American Railway Engineering Association at its recent annual convention in Chicago heard a report of its Committee on Wood Preservation covering investigation of destruction by termites and possible control methods. Results of tests at the Almirante, Panama, testing station were reported substantially as follows:

Pentachlorphenol: Pine blocks, 4 x 4 x 6 in. treated with Pentachlorphenol and exposed to termite and fungus attack in November, 1939. They showed no attack on October 20, 1941. All controls were completely destroyed.

Celcure: 18 southern yellow pine sapwood sticks treated with 1, 2 and 4 per cent solutions of Celcure and exposed to termite attack November 18, 1938. They were examined in August, 1941, with following results:

One per cent solution—average retention of 0.33 lb. toxic per cu. ft. Of the six sticks, three showed slight termite attack.

Two per cent solution—average retention of 0.66 lb. per cu. ft. Of the six sticks, four showed slight termite attack.

Four per cent solution—average retention of 1.33 lb. per cu. ft. Of the six sticks, two showed slight termite attack and two some fungus attack.

Controls badly attacked.

Cuprinol: 16 sticks, 2 x 4 x 16 in. were dipped in Cuprinol. Eight were treated with green Cuprinol and eight with clear Cuprinol. They were exposed to termite attack on June 25, 1937. By January 8, 1938, they had been so badly damaged by termites that test was abandoned.

Chemonite: two southern pine logs, 7 ft. long by 9 in. in diameter, were treated with Chemonite and exposed to termite attack February 13, 1937. Two similar specimens also exposed to fungus attack at same time. None of the specimens showed any deterioration in October, 1941.

Chemonite: 80 sticks, 1 x 3 x 18 in., were treated with Chemonite and exposed on August 11, 1937. Forty specimens were exposed to termite attack and 40 to fungus attack. Approximately half were lost, but 24 specimens remaining in the fungus testing ground in October, 1941, showed no trace of attack. The seven sticks remaining in the termite tests showed no attack in October, 1941. All controls were badly attacked in both cases.

◆

Wool Scouring Liquors

Treatment of wool scouring liquors by dialysis, precipitation, agitation, absorption on stone in a packed column, and electrolysis, were studied to undertake clarification of the stable colloidal wastes resulting from cleansing raw wool in the presence of synthetic detergents such as sulfated higher alcohols. Electrolysis showed very little promise, but dialysis indicated the best possibilities. Louis J. Sitomer and Frank C. Vilbrandt. *Virginia J. Sci.* 2, 206.

◆

Field-mouse Control

The practical value of a zinc phosphide rodenticide in poisoned baits for the control of field mice was demonstrated. J. H. Allison. *Trans. Illinois State Hort. Soc.* 74, 327-8.

◆

Action of Soap on the Skin

(*From Page* 33)

"Many new wetting agents are finding use as detergents for cleansing the skin. Some of these materials, which were formerly considered cutaneous irritants, have now been shown to be nonirritating when properly made and have been satisfactorily substituted for soap under conditions in which soap has been found to be irritating.

"In spite of the large amount of material existing on the subject of detergents, there remain numerous fundamental problems to be solved. Further elucidation of the process of cornification of the skin would be valuable, as well as a study of the factors affecting penetration of detergents and other substances into the various layers of the skin. The exact action of detergents in the removal of soil and on the skin itself calls for further investigation. The pathogenesis of a dermatitis from the use of detergents especially, and the development of a reliable standard patch test or other tests to aid in the proper interpretation of the causal factors of such a dermititis, are subjects for consideration by laboratory and clinical workers. With further research on some of these fundamental subjects there would undoubtedly be developed more effective and safer detergents and perhaps a more effective method of skin sterilization without injury to the skin."

[1]Klauder, J. V.; Gross, E. R., and Brown, Herman: Prevention of Industrial Dermatitis, with Reference to Protective Hand Creams, Soap and the Harmful Role of Some Cleansing Agents, Arch. Dermat. & Syph. 41: 331-356 (Feb.) 1940.

[83]Lane, C. G.: Skin Diseases with Particular Reference to Their Industrial Application, J. Indust. Hyg. 7: 444-450, 1925.

[84]Committee for Healthful Working Conditions, National Association of Manufacturers: Industrial Dermatitis, Indust. Med. 9: 319-322, 1940.

[85]Schwartz, Louis, and Tulipan, Louis: Occupational Diseases of the Skin, Philadelphia, Lea & Febiger, 1939, p. 37.

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INSIDE NEWS

JUNE PREPARED BY NATIONAL CAN CORPORATION, NEW YORK, N. Y. 1942

A Potent Weapon Behind National's Research

BACTERIOLOGY—THE WEAPON—For the attack on problems of the canning industry, to defend it against the ravages of food spoilage. This is a relatively new science, involving the study of invisible microorganisms, widely distributed in nature. If it were not for the presence of these microorganisms which grow readily in foods, canning would be relatively simple.

In the days before Bacteriology became recognized as an exact science, it was known that foods packed in cans required heating in order to prevent spoilage of the contents. This brought about experimental canning which resulted in more or less hit or miss methods and frequently almost complete spoilage occurred. As more became known of Bacteriology, the direct relation between this science and the canning industry started extensive work in applying this science, which has resulted in the establishment of processing temperatures and times for all canned products, and has practically eliminated spoilage.

The study of microorganisms which are in or on the surfaces of all foods and equipment in canning plants, as well as in the ingredients used in canning, and the methods of determining the temperatures required to destroy the various forms of these microorganisms has made it possible to place the canning industry on a firm scientific basis.

This brief discussion will indicate to the reader why National's Research Field Service established a Bacteriological Laboratory and built up a competent staff to apply this science to the problems of the canning industry.

The photograph shows one of the staff members determining the microorganisms in a spoiled canned product. Not only does a knowledge of these microorganisms occurring in the raw materials help to determine the canning procedure necessary to destroy them or render them inactive, but it also makes it possible to determine why a can of food has spoiled. Work of this nature along bacteriological lines is absolutely necessary to the Research Field Service men, for when they detect spoilage in the canner's plant, it is not always possible to immediately determine the cause. Through the aid of their Bacteriological Laboratory, samples of these spoiled goods are examined and findings reported back immediately to men in the field who are then able to take steps at once to solve the canners spoilage problems.

To those unfamiliar with the canning industry it may be seen that the science of Bacteriology, thought by many to be related solely to the medical field, also serves a fundamental purpose in the canning industry. "RESEARCH IS ORGANIZED THINKING." (141)

Fluoride Activator Recently Developed

A new activator developed at a southern university experiment station increases the effectiveness of sodium fluoride, a material which has recently been in very short supply. The result has been to decrease the quantities of fluoride necessary for effective insect control. (142)

Bromelin Obtained From Pineapples

The United States Department of Agriculture in cooperation with the Hawaiian Agricultural Experiment Station at Honolulu, T. H., has developed a method of obtaining bromelin from the peels and cores of pineapple. The bromelin is precipitated with alcohol from juice pressed from the peels and cores in a stage of manufacture where the juice is of little value to the canner. The alcohol is then recovered and is used again with other batches of juice. Bromelin is an enzyme which breaks down meat protein and is of value in making tough meat cuts tender. (143)

Women to the Rescue

A New Jersey packing corporation has learned that it's not a man's world in which we live. Six young women, forewomen along the corporation's canning and quick-freezing lines, are enrolled as students in night courses at a New Jersey college. To the surprise of the college instructors, the young women have shown marked ability in working out engineering projects as well as initiative in improving production methods at the plant. A better method of handling No. 10 tins that won't go through the ordinary labeling machine was worked out by one young lady. She has a couple of other new labeling ideas that she thinks are practical. The others have suggested methods to speed up and simplify packing operations and they say they've just started. (144)

Shrimp Cleaning Machine

Cleaning shrimp, long considered impracticable by canners, is now economically performed by a machine. Shrimp in the shell are fed through slots between two diagonally grooved belts which carry them in position over a circular saw. The saw completely removes the alimentary canal. Large disks between the belts and above the saw serve to straighten curved shrimp sufficiently and to hold them against the saw. (145)

(Advertisement)

BY NATIONAL CAN

JUNE PREPARED BY NATIONAL CAN CORPORATION, NEW YORK, N. Y. 1942

U. S. Army Field Tests

Prove Superiority of "Parachute Ration"

Extensive Army field tests have conclusively proved that the Army Type K or "Parachute Ration" is a superior emergency field ration which can be subjected to all types of field conditions and all sorts of weather and yet please soldiers with its nutritive and appetite appeal qualities. A platoon of troops which subsisted through four days of field operations on "K" rations did not show any impairment in physical or mental conditions.

Canned meats are included in the Type K ration. The ration is composed of breakfast, dinner and supper units. The breakfast unit contains one package of "defense" biscuits, one package of compressed graham biscuits, one can of veal luncheon meat, one package of malted milk dextrose tablets, two packages of soluble coffee, three tablets of sugar and one stick of chewing gum. The dinner unit contains one package of "defense" biscuits, one package of compressed graham biscuits, one can of pork luncheon meat, one package of dextrose tablets, one tube of concentrated bouillon and one stick of chewing gum. The supper unit is composed of one package of "defense" biscuits, one package of compressed graham biscuits, one can of cervelat sausage, one 2-oz. bar of ration "D," four tablets of sugar, one package of lemon juice powder, and one stick of chewing gum. (146)

A full day's supply of emergency field rations, exhibited by Captain R. H. MacDonnell of the Subsistence Research Laboratory, Chicago.

Cannery Wastes Treated With Soda Ash

Research on the treatment of vegetable cannery wastes has revealed that soda ash can be used to advantage in biological filters in place of lime. Soda ash is not affected by carbon dioxide, while lime, when used in small amounts, is completely precipitated by the carbon dioxide. In the past, lime has been used in an attempt to control the odor and acidity in biological filters. But the amount required to maintain alkaline conditions in a high rate recirculation filter is sufficient to produce a degree of alkalinity detrimental to maximum biological activity.

In the tests with soda ash, an average increase in efficiency of 44 percent resulted from the use of this chemical over that when no acidity control was maintained. Odors were eliminated and clarification improved. The use of soda ash is expected to find practical application during the coming canning season. (147)

New Canning-Pea Withstands Heat

Several new pea varieties for canning and freezing were included in trials reported by the New York Agricultural Experiment Station at Geneva, N. Y. It was found that the new canning-pea variety, Wisconsin Merit, can tolerate heat better than any late pea yet observed. It has usually exceeded Perfection in yield, although it has been considered rather variable in berry color by some canners. (148)

Castor Extracts Combat Insects

New insecticides from the castor plant have been used effectively in the control of scale insects and several species of spiders in the Florida citrus industry. Successful tests have also been conducted on apples and vegetables, both in Florida and New England. Castor extracts may eventually find wide usage in the agricultural insecticide field, although at present there is little prospect of their effective use in household insecticides. (149)

Technical Topics

ALUMINUM CRESYLATE is a constituent of an improved form of sheep dip in powder form. The compound also contains finely divided sulphur. It is easy to pack and transport, it is not affected by hard water, it is easier to mix than plain sulphur dip and it will dilute with a high proportion of water to give an efficient bath containing a suspension of finely divided sulphur and a solution of cresylic acid. (150)

A CATION-ABSORBING RESIN deposited on a highgrade diatomaceous filter aid has been found to possess unique decolorizing and iron absorption properties by a British Columbia sugar refinery. The filtering material is said to yield soft sugars of excellent bloom. It can be used with standard filtration equipment and it is regenerated after use. (151)

METHYL BORATE can be produced directly by a method recently patented by an American company. Basis of the method is the distillation of boric acid with an excess of methanol. The methyl borate distills over as a binary azeotropic mixture with methanol. Investigations have shown methyl borate potentially useful as an ingredient of antiseptics and disinfectants. (152)

COCOA BEANS and their shells contain anti-oxidants suitable for incorporation with essential oils, organic dyestuffs and similar materials to reduce deterioration due to oxidative changes, it is claimed in a recent foreign patent. (153)

TEETOTALLER RATS, with a diet deficient in vitamin B_1, developed serious nervous disorders sooner than their litter mates who received the same diet supplemented with whiskey or alcohol. (154)

NEW SOAP PROCESS—A new soap process has just been patented (U.S. No. 2,271,619) in which soap is produced by alcoholysis instead of the usual hydrolysis. The glycerine can be readily recovered in almost pure and undiluted form, while the alcohol can be recovered for re-use. The new process makes possible an exceptional expansion in plant capacity. A further advantage is that glycerine recovery can be effected even when potash soaps are made. (155)

Every effort will be made to furnish additional information on these articles. Where such information is not obtainable, we will refer inquirers to the original source of the article. Write to National Can Corp., 110 E. 42nd Street, New York City. Please mention the number at end of article—also name of the magazine you saw it in.

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ROTENONE PRODUCTS—Derris, Cube and Timbo powders of the same finer grinding.

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HIGH KILLING POWER IN LOW DILUTIONS

Type of Base Oil	Percentage of Thanite	Dilution Ratio	% Knockdown 10 Minutes	% Dead 24Hours	Grade	Rating	% Dead & Moribund	Grade	Rating
Deodorized Kerosene	1.75	1:57	98.1	41.2	B	+ 0.8	51.0	A	+ 9.9
"	2.00	1:50	98.9	52.1	A	+12.1	65.3	AA	+24.7
"	2.50	1:40	99.2	59.5	AA	+19.1	75.1	AA	+34.3
"	3.00	1:33	99.7	65.2	AA	+21.8	83.1	AA	+42.0
"	5.00	1:20	100.0	86.1	AA	+41.6	94.6	AA	+48.7
50 Viscosity White Oil	1.5	1:67	94.8	56.6	B	+ 3.7	No moribund flies.		
"	2.50	1:40	99.5	78.5	AA	+25.6	No moribund flies.		
"	5.00	1:20	99.6	89.8	AA	+36.9	99% dead and moribund.		

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You can't *smell* the slightest kerosene odor in it, either!

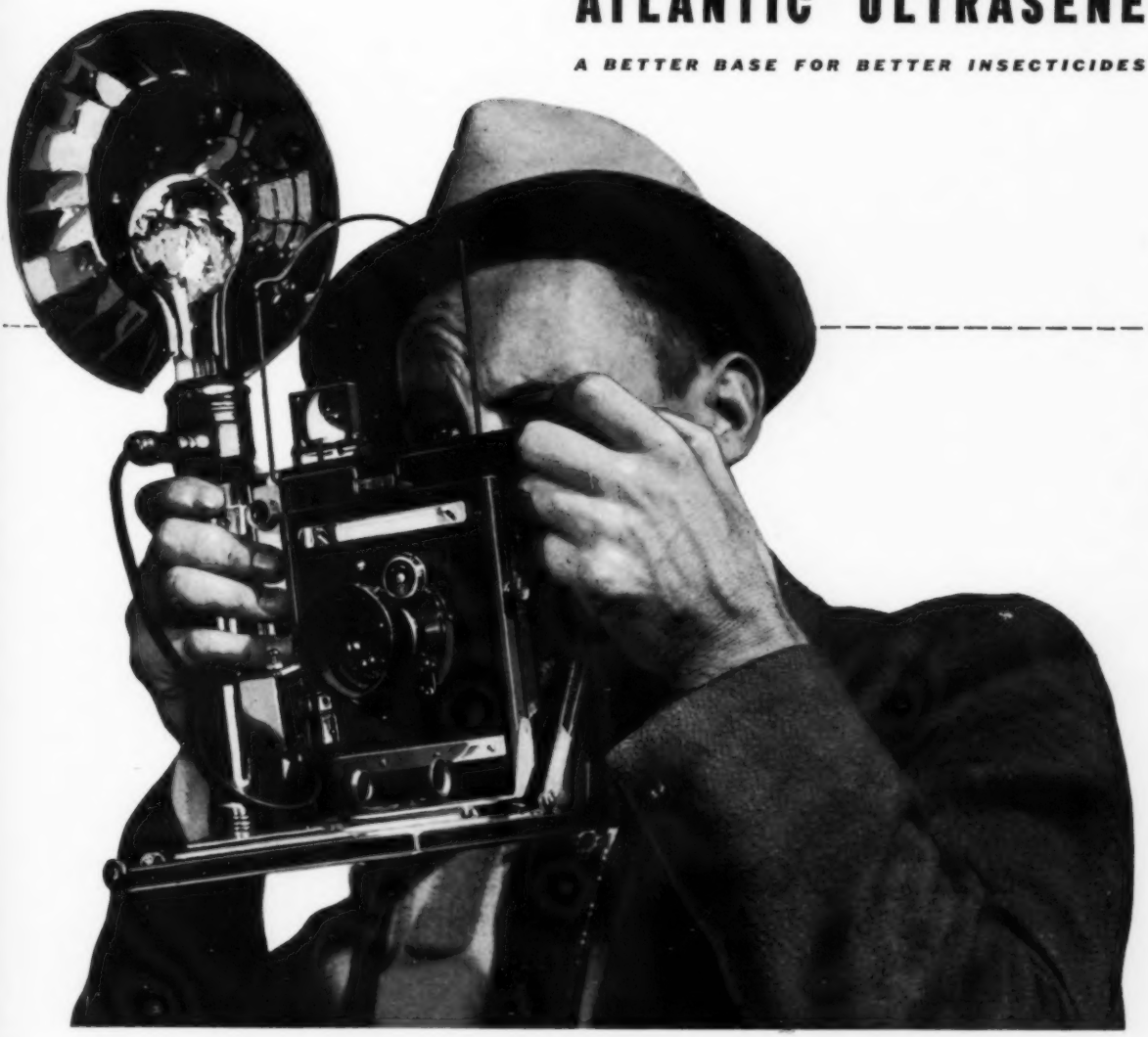
You can scarcely *find* it after it's sprayed into the air — it evaporates *that* fast!

But the very same virtues that make Ultrasene almost impossible to picture — quick evaporation and freedom from oily odor or stain — *also* make it an ideal base for insecticides — as more manufacturers are discovering every month.

You can easily prove it in your own product — with the working samples we send you. Just write to The Atlantic Refining Company, Technical Sales Division, 260 S. Broad St., Philadelphia.

ATLANTIC ULTRASENE

A BETTER BASE FOR BETTER INSECTICIDES



THERE'S A REASON

● There's a reason why the housewife will prefer one insecticide to another. Both kill effectively, yet one is more pleasant to use, nicer in the home. This is the job that proper, scientific perfuming can do, perfuming that unobtrusively covers the obnoxious kerosene odor but leaves no perfumy pall.

Send us a gallon of your unperfumed spray and let us submit our suggestions.

VAN AMERINGEN-HAEBLER, INC.

315 Fourth Avenue, New York City

McLAUGHLIN GORMLEY KING CO.

INCORPORATED

MANUFACTURING CHEMISTS · IMPORTERS AND MILLERS

M·G·K

MINNEAPOLIS
MINNESOTA
U.S.A.

CABLE ADDRESS "MACK" MINNEAPOLIS
A B C CODE 5TH EDITION IMPROVED
WESTERN UNION FIVE LETTER CODE
BENTLEY'S CODE

ADDRESS ALL CORRESPONDENCE TO THE COMPANY, NOT TO INDIVIDUALS

June 1, 1942

To Our Customers:

This advertisement doesn't sell a thing.

It is purely explanatory.

It is addressed to those who have purchased Pyrocide 20 from us in the past and to whom we had planned to sell it this year.

We made commitments last fall to deliver Pyrocide 20, this year. We have not been able to fulfill these obligations completely, because our production of pyrethrum products is being taken almost entirely for use by the Government, or is being taken by mandatory high priority orders for use on food crops.

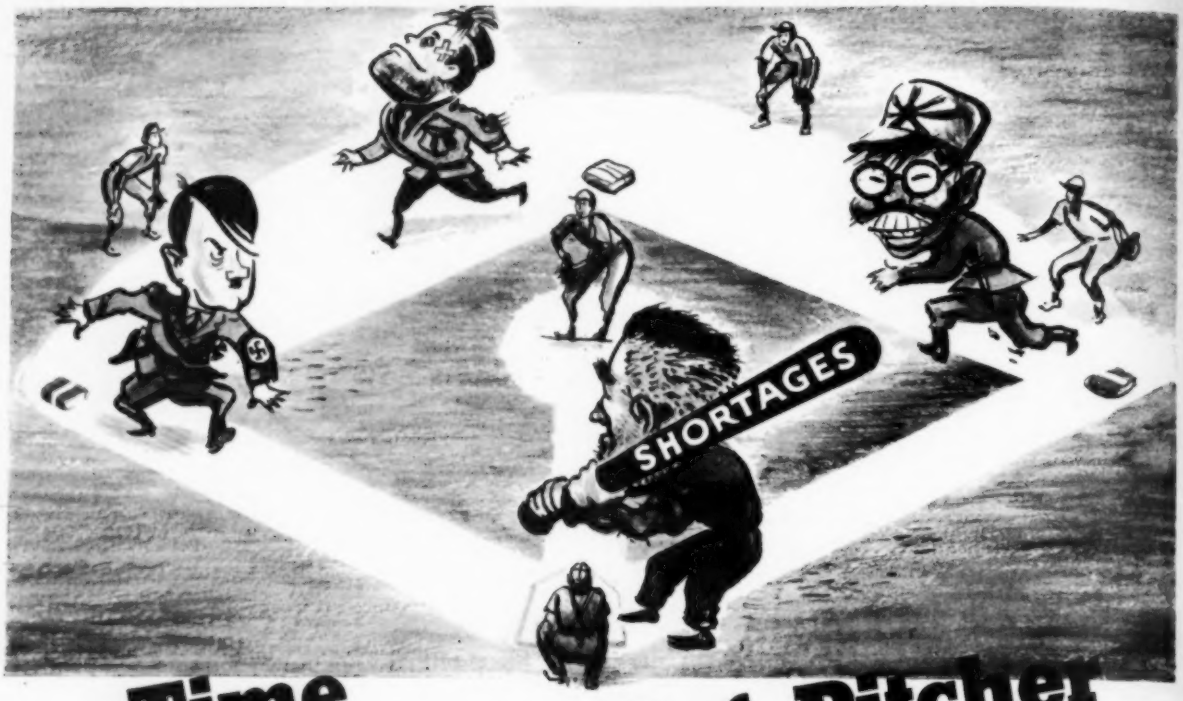
We have been "drafted" in so far as our production is concerned, just as surely as any selectee has been drafted. This works a hardship on you--it does on us.

We could go into great detail explaining the complete situation at M.G.K. but we have told you here all there really is to tell. Please be patient with us as we try to work this out. We ask your understanding and cooperation.

MC LAUGHLIN GORMLEY KING CO.

G A McLaughlin
J

President



Time for A Relief Pitcher

THE 'HIT, MUSS, & HIRO' TEAM has done some murderous batting in this World War No. 2 Series, knocking many of our most consistently used Essential Oils *right out of the home field.*

Sure, this team has topped the *'Shortage Maker League'* for the past several seasons, *but they're tired and headed for the skids.*

If U. S. Industry is going to help lick those *'sons of bums,'* it will need all the *relief pitchers* we can supply. M M & R has provided a few, *has more coming up from its hard-working laboratories,* in the form of SCIENTIFICALLY MANUFACTURED REPLACEMENTS for hard-to-get ESSENTIAL OILS AND PERFUMING MATERIALS.

Some of these *'tight spot' replacement babies* are going to earn permanent berths because they're doing a remarkable job now, *a better, more economical job,* than the regulars.

Pitch in your problems, U. S. INDUSTRY . . . our technical department *hasn't* missed the ball yet.

M M & R

Scientifically Manufactured

REPLACEMENTS

for Hard-to-Get Oils

CAM-O-SASS MM&R } Replacements for
KAMM-O MM&R } Camphoraceous Oils

OIL ROSE GERANIUM REPLACEMENT MM&R

OIL LEMONGRASS REPLACEMENT #619 MM&R

LAVENDER OIL REPLACEMENT #30 MM&R

IMITATION BERGAMOT MM&R

OIL CITRONELLA SUBSTITUTE #21 MM&R

IMITATION PINE NEEDLE OIL MM&R

Many Others Available

MAGNUS, MABEE & REYNARD, INC.

QUALITY ESSENTIAL OILS, BALSAMS, AROMATIC CHEMICALS, BASIC PERFUMES, FLAVORING MATERIALS . . . SINCE 1895

16 DESBROSSES STREET, NEW YORK CITY • 221 NORTH LASALLE STREET, CHICAGO

OFFICES IN PRINCIPAL CITIES • MEMBER OF NEW YORK BOARD OF TRADE

WESTWARD HO! Out across the prairies from the last outposts of civilization the wagon trains of the pioneers stretched a course of progress that did much to extend and consolidate the growth of our nation. It was this spirit of enterprise, banding together the resources, courage and skill of able, sincere and purposeful people, that has made our nation truly great.

THE HISTORIC COURSE OF PROGRESS...

FROM CURRIER & IVES, BY HARRY T. PETERS, REPRINTED BY PERMISSION FROM DOUBLEDAY, DORAN AND COMPANY, INC.

The uniting of the Niagara Alkali Company and the Electro Bleaching Gas Company marks a similarly able, sincere and purposeful endeavor. Now, as one unified source of supply, Niagara Alkali Company will be able to serve important chemical needs of American Industry on an expanded scale to traditional quality standards.

Niagara
ALKALI COMPANY
60 EAST 42nd STREET, NEW YORK, N. Y.

CAUSTIC POTASH · CAUSTIC SODA
PARA · CARBONATE OF POTASH
Liquid Chlorine

EBG NIAGARA ALKALI COMPANY

Business NOT As Usual

INDUSTRY is now definitely on a basis of Wartime Economy. Without doubt, it will be necessary to resort to many changes in formulae due to shortages in various ingredients.

•

IN whole-hearted co-operation with the defense effort, it is our steadfast policy to produce maximum quantities of those chemicals for which raw materials are available and which do not interfere with the defense effort.

•

WITH these available materials the soap and cosmetic manufacturer will still be able to achieve the desired results.

•

WHOLE-HEARTED co-operation between business and government is absolutely necessary in order that a complete and final Victory, both military and economic, be achieved.

OUR SINGLE AROMATIC CHEMICALS
AND REASONABLY PRICED BLENDS GIVE
Lasting Fragrance and Covering Power
TO DISINFECTANTS AND FLY SPRAY ODORS

Aromatics Division

GENERAL DRUG COMPANY

644 PACIFIC STREET, BROOKLYN, N. Y.

9 SO. CLINTON STREET, CHICAGO 1019 ELLIOTT ST., W., WINDSOR, ONT.

We will to the best of our ability continue to supply American insecticide manufacturers with our

ROTENONE PRODUCTS

in compliance with the provisions of

CONSERVATION ORDER M-133

Copy of this order available on request

●

As a result of our long experience, perhaps we can be of assistance in your insecticide problems. We can provide service, too. Call on us.

●

LET'S ALL

BUY WAR BONDS!

DERRIS, INC.

79 WALL STREET NEW YORK, N. Y.

Worth looking into!

A pleasant surprise—especially one that will keep you in the packaging swim these trying days—is worth looking into!

And that is the Anchor Hocking glass package. Why? Because Anchor Hocking offers a variety of benefits—resulting from a long list of *new* developments. And the extra advantages of Anchor Hocking experience and facilities—yours at no extra cost—are particularly important if glass packaging is new to you, and you seek thoughtful assistance in getting organized and started in glass. When you employ Anchor Hocking you employ the services of its specialists in engineering, biological and chemical research. These men know packaging from A to Z.

Because one source of supply makes both containers and closures, it will pay you to get the complete package. Your friendly Anchor Hocking packaging engineer is also at your service if you wish the containers or closures separately.

Worth looking into! *Anchor Hocking Containers and Closures*

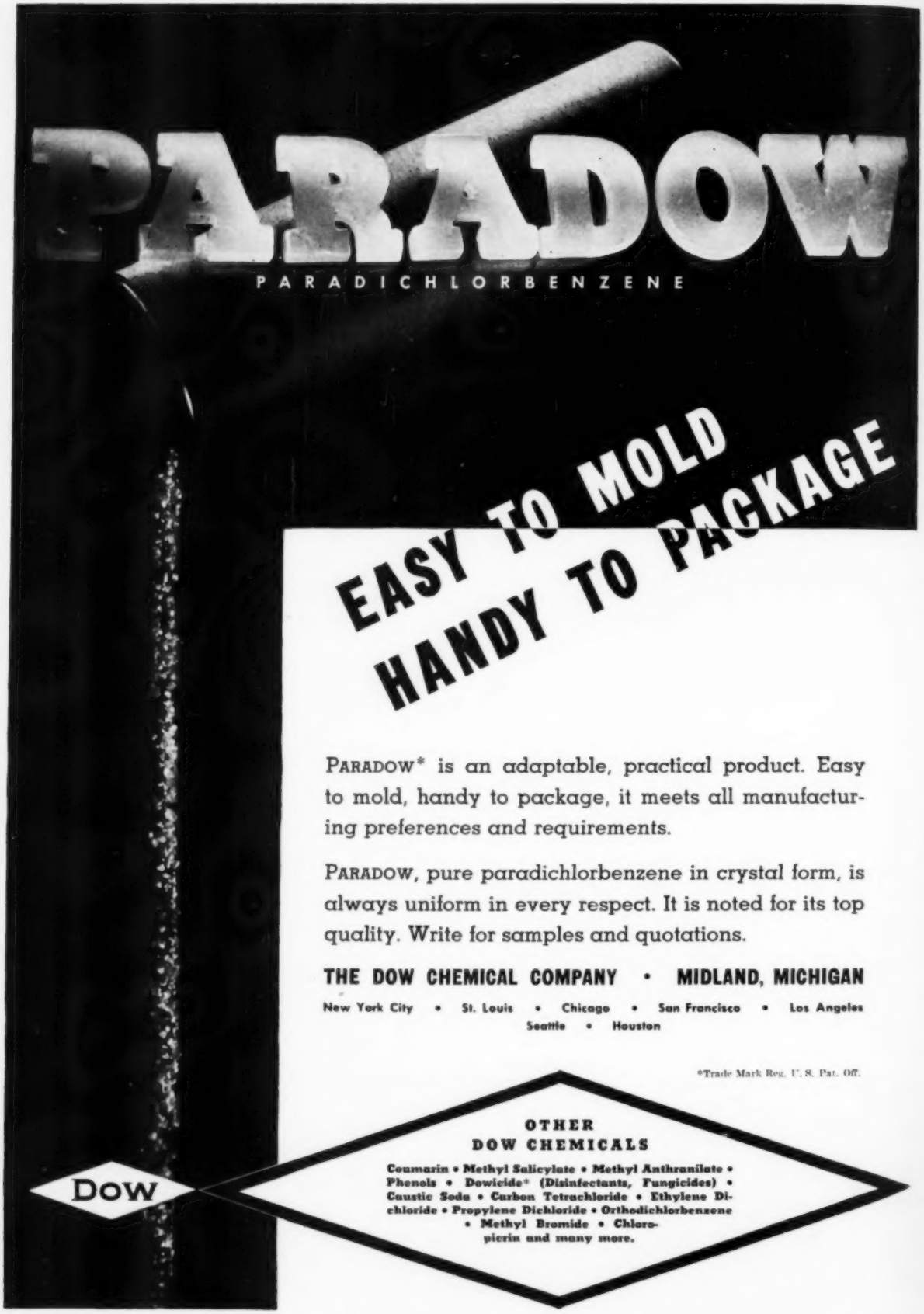
Here, in pint and quart sizes, are two of the 23 Anchor Hocking Narrow Mouth Rounds which are excellent for all liquids and household chemicals. Complete size range runs from ½ oz. to 160 ozs. Available in amber or crystal.

The Anchor HKCT Cap... To really dress up your containers, use this smart, streamlined closure with the dome top and no knurling on the skirt. The pitch of cap thread and container thread matches throughout their entire length, gives tighter seal. No interference between cap and container threads—cap spins off or on easily.

ANCHOR HOCKING

GLASS & CAPS

ANCHOR HOCKING GLASS CORPORATION • LANCASTER, OHIO



EASY TO MOLD HANDY TO PACKAGE

PARADOW* is an adaptable, practical product. Easy to mold, handy to package, it meets all manufacturing preferences and requirements.

PARADOW, pure paradichlorbenzene in crystal form, is always uniform in every respect. It is noted for its top quality. Write for samples and quotations.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

New York City • St. Louis • Chicago • San Francisco • Los Angeles
Seattle • Houston

*Trade Mark Reg. U. S. Pat. Off.

DOW

OTHER DOW CHEMICALS

Coumarin • Methyl Salicylate • Methyl Anthranilate • Phenols • Dowicide* (Disinfectants, Fungicides) • Caustic Soda • Carbon Tetrachloride • Ethylene Dichloride • Propylene Dichloride • Orthodichlorbenzene • Methyl Bromide • Chloropicrin and many more.

EXTEND PYRETHRUM

You can make pyrethrum go lots further in household fly sprays and agricultural dusts by replacing part with

D. H. S. ACTIVATOR*

Results and costs are better . . . . .

*Reg. U. S. Pat. Off.

NAVAL STORES DEPARTMENT

HERCULES POWDER COMPANY

Incorporated

961 MARKET STREET • WILMINGTON, DELAWARE

Branch Offices: Chicago • New York • St. Louis • Salt Lake City • San Francisco

NEED RECEPTION INSURANCE?

Not if you sell the BUCKINGHAM line of quality waxes and polishes, produced by a trained staff of wax experts and trouble-tested to insure complete buyer satisfaction. Your salesmen can write their own reception insurance—and get those resales more readily—with the Buckingham line.

Waterproof No Rubbing Liquid Wax
Prepared Liquid Wax (the polishing type)
Prepared Paste Wax
Powdered Dance Wax
Furniture Polish (White Emulsion)
Metal Polish (Non-Settling)
Gym Finish (Mopping Varnish)
Floor Seal
Scrub Soaps
Pre-Wax Cleaner
Bowling Alley Polish & Cleaner
Wall Cleaner (Waterless)

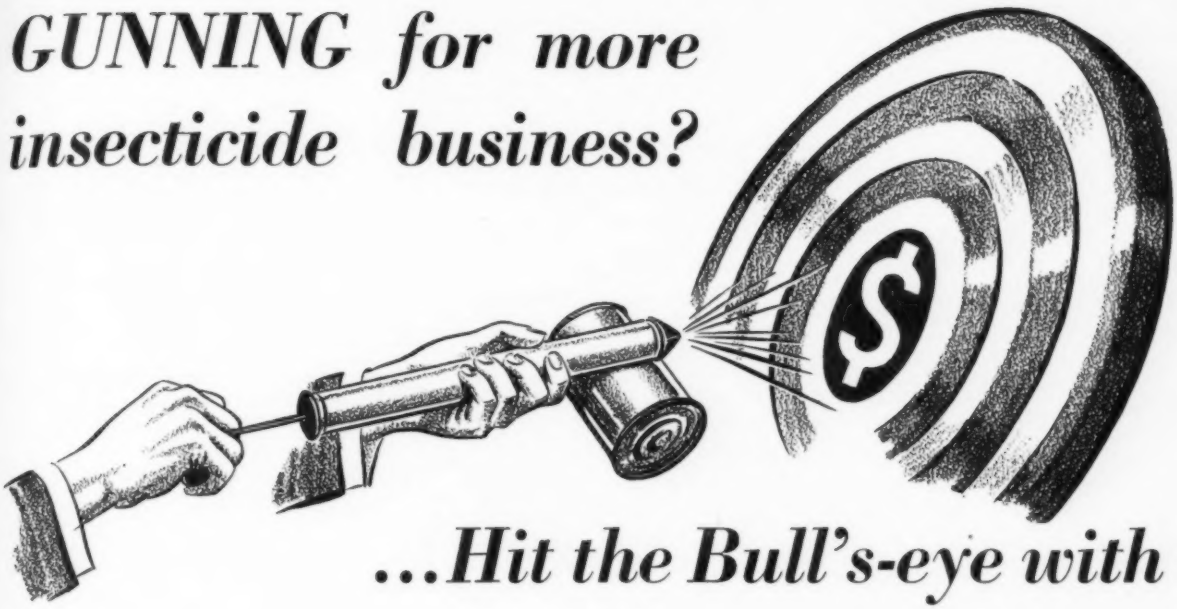
Buckingham Wax Corporation

VAN DAM ST. AND BORDEN AVE. LONG ISLAND CITY, N. Y.

Manufacturers of a complete line of

FLOOR WAXES and POLISHES—BULK and PRIVATE LABEL

GUNNING for more insecticide business?



...Hit the Bull's-eye with

PYREFUME

TRIPLE TESTED PYRETHRUM CONCENTRATE

PYREFUME has "everything it takes" to make an effective spray insecticide. Most important, of course, is a dynamic death-dealing power in PYREFUME against flies, bedbugs, roaches, mosquitoes and silverfish. Your spray made with PYREFUME and diluted as recommended will meet the standard set by the National Bureau of Standards, U. S. Department of Commerce.

SCIENTIFIC—Expert laboratory men, chemists, pharmacognosists, bio-assayists and entomologists supervise the various steps of PYREFUME production.

STABLE—A special Penick anti-oxidant process provides prolonged stability of PYREFUME.

STAINLESS—Freedom from inert waxes and resins make PYREFUME as stainless as a pyrethrum concentrate can be.

FRAGRANCE—PYREFUME is singularly free from unpleasant odor—due to natural flower fragrance.

ECONOMICAL—PYREFUME today costs less than it did. However, present circumstances suggest that you place your orders for 1942 now to protect yourself with supplies when needed.

S. B. PENICK & COMPANY

50 Church St., New York, N. Y. 735 W. Division St., Chicago, Ill.

THE WORLD'S LARGEST BOTANICAL DRUG HOUSE

SAFER TO USE
LESS IRRITATING
LESS TOXIC

ESPECIALLY
RECOMMENDED
FOR HOSPITAL
AND
SURGICAL USE

ANTISEPTIC— **DYPHEN** —GERMICIDE

For The Wholesale Trade Only

NO-ROMA

ODORLESS DISINFECTANT

COEF. 2 F. D. A. COEF. 5 F. D. A. COEF. 10 F. D. A.
NON-CORROSIVE NON-POISONOUS
WHEN USED AS DIRECTED

ANOTHER Baird's PRODUCT

Besides disinfecting and deodorizing NO-ROMA has an additional quality in that it checks molding and mildewing. Makes a milky-white solution when mixed with water. Free from any precipitation or oily float.

When the proper solution of NO-ROMA is made it is odorless, and this particular advantage opens new fields for the use of disinfectants.

For Samples and Other Information Please Write

BAIRD & McGUIRE, INC.

HOLBROOK, MASS. ST. LOUIS, MO.

SANITARY PRODUCTS

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

ONCE more, we want to point out for the benefit of Government officials that so-called liquid household insecticides are far more important in the present wartime economy than they apparently believe. They still seem convinced that the big use of "fly spray" is to rid effete housewives of the annoyance of flies and mosquitoes. They pass over the sanitation angles of fly, mosquito and bedbug control quickly and refuse to become excited about it. They talk of agriculture, and protecting the crops of the farmers. But here it ends. They do not pay too much attention to protecting harvested crops or foods in process or in storage,—in canning, in dairies, in bakeries, in retail establishments, and a thousand other similar places. For this latter purpose, we beg to point out once again that the so-called household type insect sprays are used,—millions of gallons per year. If the Government kills off these products by raw material restrictions or makes them unfit for food use, millions of dollars worth more of food per year will be ruined by insect damage. Not a household insecticide manufacturer in the country should give the W.P.B. or any other Government department a chance to ignore this fact.

EVERY year, it seems that the household insecticide manufacturer has his big spring worry. In the past it has been carry-overs from the previous year, or the worry of a dry cold spring and the prospect of a poor bug crop during the summer. This season it is not a case of how big will be the demand, but how can the insecticide manufacturer make enough goods,—and if he gets them made, what can he pack them in? If it isn't one thing, it's another.

COINCIDENT with a serious shortage of rotenone, and a growing scarcity of pyrethrum which some suppliers believe will become acute to the point of a ban on household insecticide uses in 1943, we note that U. S. Government requests for insecticide bids, particularly Army bids, call for an unnecessarily high concentration of toxic ingredients. No Government department, not even the Army or the Navy, especially today, should attempt to buy liquid insecticides three and four times as strong as a standard AA product. Such products represent sheer waste and are completely unnecessary. Large industrial users consistently obtain effective insect control with AA grade sprays. Then why do Government departments have to buy products so much stronger? Would they do this if the bill were not to be paid from the public till? But be that as it may, there are too many "screwy" insecticide bids coming from the Government. And in war, not even Government departments should be permitted repeatedly to fly in the face of good sound technical opinion, particularly where their acts involve the waste of vitally needed scarce materials.

Insecticide-Disinfectant Meeting Considers War Problems

PROBLEMS of the war, both problems of raw material supplies as well as problems of consumption arising from war uses of insecticides and disinfectants, hold the center of the stage at the 28th annual mid-year meeting of the National Association of Insecticide & Disinfectant Manufacturers being held at the Edgewater Beach Hotel, Chicago on June 8 and 9. Experts from Government departments, the industry and from consuming channels are scheduled to address the meeting at which a registration of 250 representatives of leading manufacturers is anticipated.

Raw material and finished goods priorities, public health aspects of the war and its effect on sanitation materials, use of insecticides and disinfectants in the army and in protection of workers in war plants, the use of insecticides in the home, and other similar subjects will be discussed. "News, Views and Previews" is the subject of an address by Donald McGibney, news commentator for CBS Radio. A film showing training of soldiers and army camp conditions will be shown.

JOHN N. CURLETT
. . . will preside at sessions

A raw material and container symposium scheduled for June 9 will have as its principal speakers Dr. Alfred Weed of John Powell & Co., New York, on "Pyrethrum and Rotenone"; J. H. Carpenter of the Koppers Co. on "Coal-Tar Raw Materials"; Frank Rapp of Hercules Powder Co. on "Pine Oil"; and a container group will include Roger V. Wilson of Continental Can Co. on "Cans"; G. D. Zuck of the Wilson & Bennett Manufacturing Co. on "Steel Containers"; Dr. J. H. Toulouse of the W.P.B. on "Bottles and Closures." Among the other leading speakers who will take part in the container symposium is Donald C. Knapp of the Chemicals Branch, W.P.B. who will talk on "Steel for Shipping Containers."

Other addresses will include "Use of Insecticides and Disinfectants in the Home" by Ruth Crowley, columnist on the Woman's Page of the *Chicago Sun*. "The place of Disinfectants and Insecticides in our War Program" by Dr. John E. Dunn of the U. S. Public Health Service; "Preservation of Health in Crowded City Areas under War-time Conditions" by Major Joel I. Connolly of the Chicago Health Department. Guy E. Reed, vice-president of the Harris Trust & Savings Bank, Chicago, will discuss the financial outlook in the light of war conditions.

Two other important U. S. Government representatives will be heard as speakers. Melvin Goldberg of the Chemicals Branch of the W.P.B., directly in charge of insecticides, will discuss "The Proposed Industry Committee for the Insecticide Industry." George M. Jackson of the Interstate Commerce Commission, Washington, will talk on "Transportation Problems Under War-time Conditions." J. L. Brenn of the Huntington Laboratories, president of the Priorities Committee of the NAIDM will report for that committee. Dr. A. Edison Badertscher of McCormick & Co., Baltimore, chairman of the Insecticide Scientific Committee will report on scientific developments of the past six months as will Dr. Emil Klarmann of Lehn & Fink, Inc., Bloomfield, N. J., chairman of the Disinfectant Scientific Committee.

The meeting will extend for two days beginning on Monday, June 8 at 9 a.m. Group luncheons will be served on each of the two days and the convention will close with an informal beefsteak dinner on Tuesday evening, June 9, at the Edgewater Beach Hotel. H. M. Clark of Dr. Hess & Clark, Inc., Ashland, O., is chairman of the entertainment committee. John Powell of John Powell

HENRY A. NELSON
. . . will assist at
Monday afternoon session

& Co., New York, is in charge of hotel and financial arrangements. John Curlett of McCormick & Co., Baltimore, at present on leave with the W.P.B. in Washington, and president of the Association will preside assisted by First Vice-President Henry Nelson of the Chemical Supply Co., Cleveland. The program committee is headed by Ralph O. Cowin of the Standard Oil Co. of Ohio, Cleveland. The general sessions of the convention will be preceded on Sunday evening by a meeting of the Board of Governors and of various committees at the Edgewater Beach Hotel.

The program follows:

H. M. CLARK
. . . heads entertainment committee

PROGRAM

MONDAY, JUNE 8, 1942

MORNING SESSION

J. N. CURLETT, *Presiding*

9:00 A.M. REGISTRATION

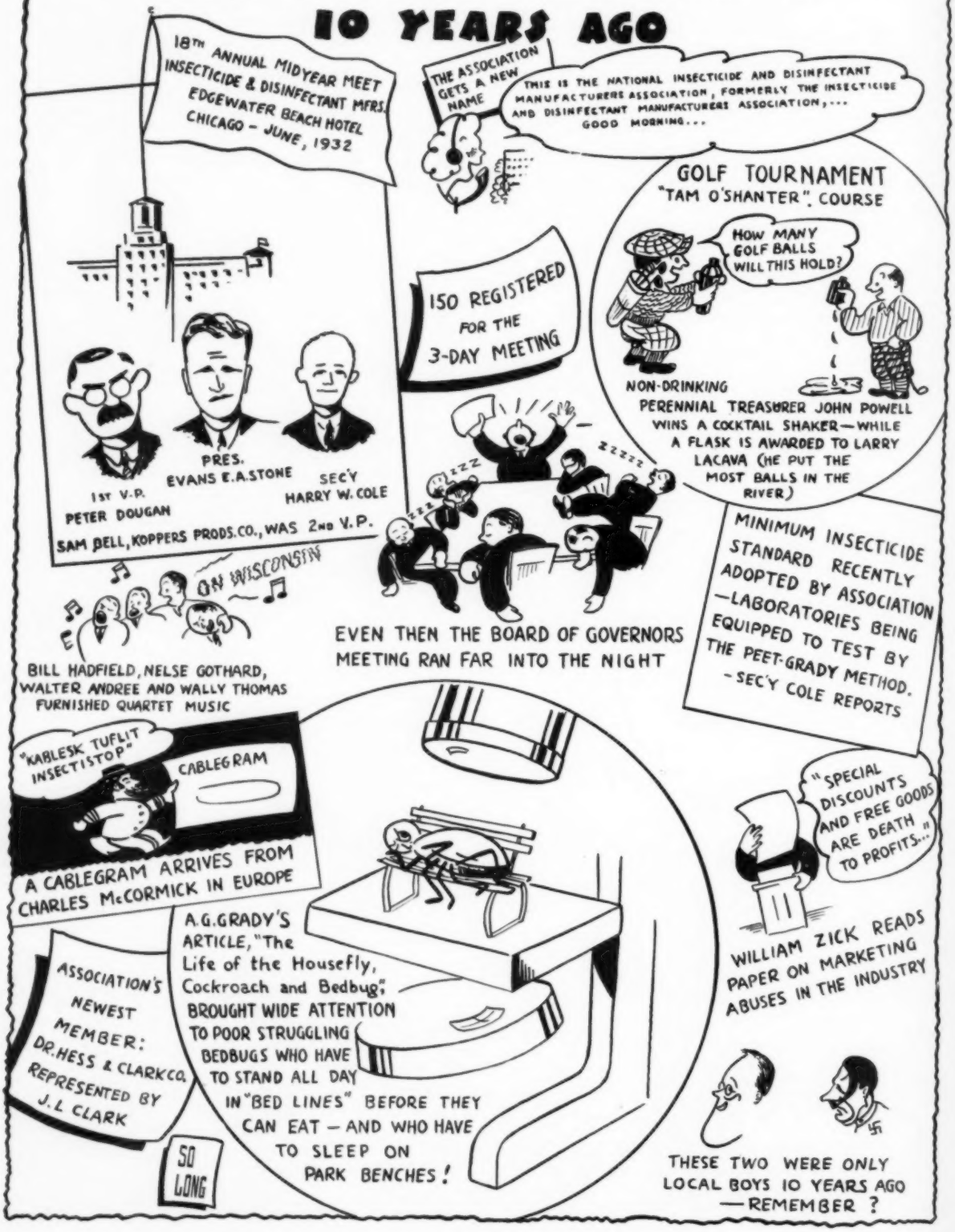
10:00 A.M. Meeting called to order
Announcements
Address of the President—J. N. Curlett, McCormick & Co.
Appointment of Committees
Report of the Secretary—H. W. Hamilton, White Tar Co. of N. J.
Roll Call and Introduction of Guests
Report of Entertainment Committee—H. M. Clark, Dr. Hess & Clark.
"News, Views and Previews"—Donald McGibney, CBS Radio News Commentator, Chicago

12:30 P.M. GROUP LUNCHEON

RALPH O. COWIN
. . . in charge of program

REMEMBER?

10 YEARS AGO


18TH ANNUAL MIDYEAR MEET
INSECTICIDE & DISINFECTANT MFRS.
EDGEWATER BEACH HOTEL
CHICAGO – JUNE, 1932
THE ASSOCIATION GETS A NEW NAME
THIS IS THE NATIONAL INSECTICIDE AND DISINFECTANT MANUFACTURERS ASSOCIATION, FORMERLY THE INSECTICIDE AND DISINFECTANT MANUFACTURERS ASSOCIATION,... GOOD MORNING...
GOLF TOURNAMENT
"TAM O'SHANTER", COURSE
HOW MANY GOLF BALLS WILL THIS HOLD?
NON-DRINKING PERENNIAL TREASURER JOHN POWELL WINS A COCKTAIL SHAKER—WHILE A FLASK IS AWARDED TO LARRY LACAVA (HE PUT THE MOST BALLS IN THE RIVER)
150 REGISTERED FOR THE 3-DAY MEETING
1ST V.P. PETER DOUGAN
PRES. EVANS E.A.STONE
SEC'Y HARRY W. COLE
SAM BELL, KOPPERS PRODS.CO., WAS 2ND V.P.
ON WISCONSIN
BILL HADFIELD, NELSE GOTHARD, WALTER ANDREE AND WALLY THOMAS FURNISHED QUARTET MUSIC
EVEN THEN THE BOARD OF GOVERNORS MEETING RAN FAR INTO THE NIGHT
MINIMUM INSECTICIDE STANDARD RECENTLY ADOPTED BY ASSOCIATION —LABORATORIES BEING EQUIPPED TO TEST BY THE PEET-GRADY METHOD. -SEC'Y COLE REPORTS
"KABLESK TUFLIT INSECTISTOP"
CABLEGRAM
A CABLEGRAM ARRIVES FROM CHARLES McCORMICK IN EUROPE
"SPECIAL DISCOUNTS AND FREE GOODS ARE DEATH TO PROFITS..."
WILLIAM ZICK READS PAPER ON MARKETING ABUSES IN THE INDUSTRY
A.G.GRADY'S ARTICLE, "The Life of the Housefly, Cockroach and Bedbug" BROUGHT WIDE ATTENTION TO POOR STRUGGLING BEDBUGS WHO HAVE TO STAND ALL DAY IN "BED LINES" BEFORE THEY CAN EAT – AND WHO HAVE TO SLEEP ON PARK BENCHES!
ASSOCIATION'S NEWEST MEMBER: DR. HESS & CLARK CO. REPRESENTED BY J.L CLARK
SO LONG
THESE TWO WERE ONLY LOCAL BOYS 10 YEARS AGO —REMEMBER ?

MONDAY, JUNE 8, 1942
AFTERNOON SESSION

H. A. NELSON, *Presiding*

2:00 P.M. Meeting called to order

Announcements

Committee Reports

"The Use of Insecticides and Disinfectants in the Home"—Mrs. Ruth Crowley, Columnist, Women's Page "Chicago Sun"

"The Use of Insecticides and Disinfectants in Our War Program"—P. A. Surgeon, Dr. John E. Dunn, U. S. Public Health Service, Washington, D. C.

"Ohio Soldiers"—Film

"What Can The Industry Do to Help Preserve Health in Congested City Areas Under War-time Conditions?"—Maj. Joel I. Connolly, Chicago Board of Health.

"The Public Health Aspect of Household Insecticides and Disinfectants"—H. C. Fuller, N.A.I.D.M. Consultant, Washington, D. C.

Adjournment

TUESDAY, JUNE 9, 1942
MORNING SESSION

J. N. CURLETT, *Presiding*

9:30 A.M. Meeting called to order
Announcements

Report of N.A.I.D.M. Priority Committee—J. L. Brenn, Huntington Laboratories, Inc.

Raw Materials Symposium

"Pyrethrum and Rotenone"—Dr. Alfred Weed, John Powell & Co.

"Coal Tar Raw Materials"—J. H. Carpenter, Koppers Co.

"Pine Oil"—Frank Rapp, Hercules Powder Co.

"Synthetic Toxics for Insect Sprays"—Ira P. MacNair, MacNair-Dorland Co.

Container Symposium

"Cans"—Roger V. Wilson, Continental Can Co.

"Drums"—Gordon D. Zuck, Wilson & Bennett Mfg. Co.

"Bottles and Closures"—Dr. Julian H. Toulouse, Containers Division, War Production Board, Washington, D. C.

"Steel Containers"—Donald C. Knapp, Chemicals Branch, War Production Board, Washington, D. C.

"The Financial Situation"—Guy E. Reed, Vice-President Harris Trust & Savings Bank, Chicago, Ill.

12:30 P.M. GROUP LUNCHEON

TUESDAY, JUNE 9, 1942
AFTERNOON SESSION

J. N. CURLETT, *Presiding*

2:00 P.M. Meeting called to order

Announcements

Committee Reports

"Shelf Stability of Floor Wax Emulsions"—C. S. Kimball, Foster D. Snell, Inc.

"The Proposed Industry Committee for the Insecticide Industry"—Melvin Goldberg, Inorganics Section, Chemicals and Allied Products Branch, War Production Board, Washington, D. C.

"Transportation Problems under War-time Conditions"—George M. Jackson, Assistant to Director, Interstate Commerce Commission, Washington, D. C.

Committee Reports

Unfinished Business

Adjournment

Address of the President

John N. Curlett

IT IS, indeed, a pleasure to welcome you to our mid-year meeting. We are holding our meeting in Chicago rather than the location previously decided upon due to the transportation situation. Your officers and board felt that more people could attend if the meeting were held at a central point.

Never before in the history of our association has the membership been confronted with as many new and different problems on which there are no precedents. When the conditions for doing business are changing so fast on such a basis, there is much confusion. However, I think we as an industry, should feel most happy that the products represented have a definite place in the war effort. Our products are used for maintaining the public health of our armed forces as well as the health of our civilian population. Many of our companies manufacture products used in agriculture which again is an important factor in our economy. Both from a public health as well as an agricultural standpoint our membership is performing a very important function.

Knowing that this statement is true, no doubt many times the question arises in your mind—why it is necessary that we manufacturers of such important products be subjected to restrictions which work hardships on our business? The answer to this question is fairly simple—winning the war in which we are engaged is the primary objective of every citizen in the United States. It makes little difference whether we must change our personal lives and habits or business, and we should be happy to cooperate. We know that a sacrifice must be made all along the line in order to bring this war to a successful and a speedy conclusion.

The type of war in which we are engaged is also different from anything we have ever experienced before, and we are finding that true when we can't get containers, the type we want, the type we are set up to use and we can't get all of the strategic materials we desire. On the other hand, I think we should feel very fortunate that business of this country is being tied in very definitely with the war program. The various agencies in Washington whose functions it is to correlate all of the factors of our economy take as much as is necessary for the successful completion of its war program, but have ever before them the preservation of our business institutions for the future, as far as possible.

I have had the pleasure of being drafted by the government and have been in Washington for months. I can assure you that there is but one objective in the mind of the $1.00 per year executives—to win the war. I can also assure you that there is the desire to maintain the private enterprise system of this country and to interrupt as little as possible the flow of merchandise—and when such changes are made they are in the order of a product's importance and essentiality. So while we are in for turbulent days,

changes in our business, we should receive some consolation from the thought that the sooner the job is done, the sooner we will again hang out the sign "business as usual."

There is a slogan in many offices in Washington, "Time is Short." Its meaning is not only applicable to functions of government, it is true of the operation of our armies, our navies and business as well, it further implies that it is necessary for all, no matter what their part in winning this war, to keep on their toes. Be flexible so that shifts and changes may be made quickly and with as little confusion as possible.

I want to thank the advisory committee consisting of Messrs. MacNair, Zick, and Young for their untiring efforts in working with the officers of this association. Their cooperation exemplifies the spirit which has made this association outstanding for many years.

Report of The Secretary

H. W. Hamilton

THIS report covers the work of the executive office of the Association for the first half of 1942. As members, you have been informed as to the various activities of the association through the issuance of bulletins. Since the December meeting 63 bulletins have been issued, (as of May 30).

Legislation

During 1942 there were eight legislatures in regular session and a number of special sessions. Situations in Kentucky, New Jersey, New York, Texas, State of Washington and the District of Columbia developed which required special consideration on the part of our legislative committee and the executive office. The details of these actions will be fully covered in the report of C. L. Fardwell, chairman of the legislative committee. During the past few months, the model bill has been completed and it is now felt that the association has a model form of an insecticide and fungicide bill, meeting all the requirements of our industry. It is not our intention to use this model bill except in cases where new bills are offered for the regulation of insecticides, etc., or where unworkable provisions are being considered.

Official Test Insecticide

The 1942 Official Test Insecticide has been available at the executive office since May 15th for distribution to members and non-members. The 1942 O.T.I. is official for use until

H. W. HAMILTON

June 1, 1943. A very small quantity of the 1941 O.T.I. was left on hand when the 1942 O.T.I. became official on June 1. Incidentally, it is well to note that during the past year the preparation and distribution of the O.T.I. was carried on without any financial loss to the association. We believe the practice adopted by the association for payment has proven successful and there appears to be no reason why the preparation and sale cannot be continued without a loss in the future.

Specifications for Public Purchases

This is still a subject that requires considerable correspondence and a great deal of attention on the part of the executive office, the Specifications and Public Purchases Committee, and the Scientific Committees. Bids are constantly being checked for any peculiar specifications which may appear. At the same time, the association is trying to foster the universal adoption of the Commercial Standards. A specific case is that of New York State, where vigorous protest was lodged against an insecticide specification and we are continuing actively to follow up this protest. The work of the executive office on the matter of specifications has been in close cooperation with the Specifications and Public Purchases Committee, of which G. M. Baird is chairman, and the Insecticide Scientific Committee, of which Dr. A. E. Badertscher, is chairman.

War Effort

One of the major efforts of the executive office during the past six months has been concerned with the relations of this industry to the war effort. The various orders and ruling being made by Federal agencies involved in the coordinating of civilian activities in general, and with war requirements, are constantly being scrutinized in the executive office. Through our Washington representative, H. C. Fuller, we have been kept in very close touch with the various boards. When information has come to the attention of the executive office, the important facts have been bulletined immediately to members, either in their entirety or in part as the particular circumstance required. It has been our endeavor to send out only definite orders and rulings that affect our industry so as to avoid misinformation and confusion.

Under Conservation Order M-81 (Tin order), the association filed protest and requested clarification of definitions. A brief was prepared and submitted through Mr. Fuller to the proper board heads in Washington. We have received an indication of some

success in this instance but the matter is still under consideration. Through Mr. Fuller's office various interpretations of rulings, orders, definitions, etc. have been clarified for the benefit of our members.

Industry Committee

An effort was made to have an Industry Committee appointed. In fact, Mr. Fuller, Mr. Curlett and Mr. MacNair met with the board in Washington with this in view. Several suggestions were made to the representatives of the proper boards in Washington but, after consideration, it was decided that an Industry Committee for the Household Insecticide and Disinfectant Industry was not necessary at this time. It is possible that an Industry Committee, or industry representatives, may be called for in the future, and when this develops it is understood that the association will be consulted.

The work of the executive office will undoubtedly become more and more involved with administrative orders and rulings affecting our industry. Every member should keep in mind that this is an association formed for mutual benefit. When rulings are obtained which might be of benefit to other members of the association, or any other bits of information obtained, we believe that the best interests of all would be served if the association office were informed so that proper bulletins might be sent out to all members. While the executive office goes over all the literature coming in, it is quite possible that some very important fact might be overlooked, and your cooperation is requested in bringing these matters to our attention.

It is no secret that we can expect further administrative orders affecting almost every branch of our industry. In addition to new orders, there are the constant changes of rulings which may result in cancellation of orders or in extension of orders. The information furnished by the association office is of necessity of a basic nature. How it will apply to each member's particular business is often a matter of interpretation. Where questions arise as to the application to your own particular set-up, it might be well to consult your local or regional boards.

Payroll Allocation—War Bonds

We are pleased to announce that the majority of the members of the association advise they now have in operation voluntary payroll savings plan for the purchase of war bonds, which indicates splendid cooperation on the part of our industry as represented by the members of this association.

During the past few months more members of the association have called at the association office than in previous years. This is a good practice and it is suggested that when members are in New York from out of town, or when nearby members are in the vicinity, that they call at the association office and discuss matters of mutual interest. The executive office is also available for committee meetings. This is your association and the amount of benefit you obtain from it depends to some extent on the support you give it in the way of constructive suggestions and information.

The executive office during the past six months has been capably handled by Mrs. Estelle D. Sullivan, the executive secretary. An Advisory Committee, consisting of Ira P. MacNair, W. J. Zick and Russell H. Young, have given invaluable assistance. Mr. MacNair has continued to give unstintingly of his time and efforts. If it were not for the generous efforts, time and thought given by this Advisory Committee, and the careful consideration and familiarity with association matters which Mrs. Sullivan has developed, it would not be possible to give the service which N.A.I.D.M. renders. This statement is made on the basis of the service of other trade associations contacted, most of which have much greater facilities, particularly as to finances and staffs.

It is our sincere wish to have the executive office of the association one which will materially benefit all members equally. Whether we have succeeded in this or not is a matter for you as members to decide. Personally, I should like to take this opportunity to thank all members of the association, and especially those connected with the executive office, for their support.

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Fly as Pollution Spreader

Studies of the house fly in transmitting organisms of the food poisoning type were recently summarized in an article entitled "The House Fly as a Vector of Food Poisoning Organisms in Food Producing Establishments" appearing in the May number of the *American Journal of Public Health*. The authors, Morris Ostrolenk and Henry Welch, of the division of bacteriology, U. S. Food & Drug Administration, make the following conclusions:

"Flies fed on food infected with *Salmonella enteritidis* are capable of infecting other flies as well as the food, water, and miscellaneous surfaces with which they come into contact.

"*Salmonella enteritidis* apparently survives in the fly for the duration of the life of the fly, approximately four weeks.

"Transfer of *Salmonella enteritidis* infection from infected flies to mice and the retransfer of infection from infected mice to flies was successfully carried out.

"Fly eggs planted in mash infected with *Salmonella enteritidis* resulted in infected maggots, pupae, and adults."

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Insecticide Reinforcers

Sesamin from sesame oil, asarinin from the bark of the southern prickly ash, and certain related compounds, (all presenting the advantages of domestic origin and low cost) although practically nontoxic when dissolved in kerosene and sprayed on houseflies, enormously increase the toxicity of a dilute solution of pyrethrins when added to it. R. C. Roark. *Ind. Eng. Chemistry* 34, 489 (1942).

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Ammonium Bactericides

Amines and ammonium compounds having an aliphatic hydrocarbon of at least nine carbon atoms attached to the nitrogen atom are very effective bactericides and fungicides. Gerhard Domagk. German Patent No. 680,599.

Natural Anti-Bacterials

Citrinin and penicillic acid, both mild mould products, are bacteriostatic agents. While citrinin seems to exert a selective action on Gram positive bacteria, penicillic acid, like phenol and *para*-benzoquinone, has a more widespread bacteriostatic action and is particularly active against members of the coli-typhoid-Salmonella group of Gram negative organisms. On a weight for weight basis there is little to choose between citrinin-molecular weight 250- and penicillic acid-molecular weight 188, in the hydrated form —as inhibitors of Gram positive cocci, but on a molar basis citrinin is clearly the more active compound.

Penicillic acid has a much more potent effect as a growth inhibitor than either phenol or benzoquinone, but differs from these disinfectants in two respects—it appears to be but a comparatively poor germicide and as a growth inhibitor is much more effective in a glucose-broth medium than in a plain broth medium.

The scope for experiments aimed at making new disinfectants by synthesis with the penicillic acid structure as a model is wide, since no compound of precisely this form appears yet to have been synthesized. A. E. Oxford. *Chemistry and Industry* 61, 48-51 (1942).

Germicide Patent

A germicidal preparation consists of a relatively insoluble phenol combined with a sufficient amount of water-soluble fatty alcohol sulfate compound. This makes the phenol dissolve to form clear, transparent, uniform aqueous solutions of a phenol concentration above its normal saturation concentration in water alone. Albert L. Rawlins, to Parke, Davis & Co. Canadian Patent No. 402,938.

GLASS pinch hits for TIN

in the new insecticide containers

Below—Midway Chemical Co., Jersey City, is ready with both six-ounce and pint size amber glass containers for its "Fly Ded" insect spray. The label features a striking orange background against a blue border, with a red cap topping the container.

Below—Gulf Oil Corp., has come out with a complete new family of containers for "Gulfspray" insect killer. Shifting from tin to glass, new packages are ready in the six-ounce, pint and quart sizes. The new containers are in "for the duration."

Above—Pre-war and war-time dress of "Flit," product of Stanco, Inc., New York, and leading seller in the household insecticide field. Amber glass takes the place of tin—but the characteristic yellow "Flit" label is retained.

Victory will be measured in gallons

When you hear, with bated breath, how close the enemy has come to a victory with some raid of fifty or a hundred planes, you may wonder what merciful fate kept them from using a thousand. It was more likely lack of *fuel*, not fate, that stayed them.

To reach more oil, the Axis has been flailing about Europe and Asia like a monster, sacrificing lives by the hundreds of thousands.

The American petroleum industry, with half the world's reserves, and a tremendous production of the finest gasolines and oils, is our greatest guarantee of ultimate victory.

For the petroleum industry, Koppers has built plants to remove the corrosive hydrogen sulfide and recover the sulfur in a form that can be readily converted into war-important sulfuric acid.

Koppers produces chemicals to help make gasolines anti-knock; ingredients for the manufacture of inhibitors to prevent gum formation in gasoline; chemicals for solvent refining and dewaxing for the improvement of lubricating oils; chemicals that improve the pour point and film strength of oils.

Among other products which Koppers furnishes to the petroleum industry are piston rings; Fast's self-aligning couplings; pressure treated piling, lumber and timber. In its service to the petroleum industry, Koppers feels that it is helping write the history of the war. Koppers Company, Pittsburgh, Pa.

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Synthetic Phenol Disinfectants

FOR several years disinfectant manufacturers have been spending a great deal of time and effort on research towards producing disinfectants and germicides from other substances than coal tar acids or pine oil. The object has been to perfect a germicide which would have all of the advantages of the various disinfectants now commercially available, and at the same time eliminate many objectionable features such as odor in some cases, high toxicity in others, unstability, etc.

It was obvious that if the United States became involved in war there would be an immediate shortage of disinfectant raw materials of the coal tar and pine oil type. Awareness of this possibility caused manufacturers to redouble their efforts to perfect a new type disinfectant so that if and when a shortage of coal tar and pine oil materials occurred, the breach could be filled with these new germicides.

These newly developed formulations fall into the general classification known as synthetic phenol germicides. The most common and best known are chlorinated phenols, benzolated phenols, and brominated phenols. Briefly, the phenol is either chlorinated, benzolated, or brominated, as the case may be, to produce a compound with a much higher germicidal efficiency than the original phenol base from which it was formed.

It was apparent from the time these synthetic phenols were first produced commercially that they possessed excellent germicidal and antiseptic qualities provided they could be manufactured into disinfectants which could be produced in large quantities for commercial use.

Commercial disinfectants are either of the water soluble or water emulsifiable type. To be acceptable to the average user, they must be produced in a concentrated form which can be diluted with water by the ultimate consumer. Most synthetic phenols are not water soluble and the first step to be overcome was to find a method of making them water soluble or emulsifiable without affecting the germicidal qualities.

The manufacture of these synthetic phenols into finished disinfectants is rather involved and instead of covering this point, it might be of more interest to review a few points of a more practical nature.

Phenol coefficients can be obtained ranging from coefficient 1 up to approximately 25 or even 30. This wide range of phenol coefficient value is of importance because it means the disinfectant can be shipped in concentrated form whenever necessary, saving both freight and space, and then can be diluted at its destination for distribution to the ultimate consumer. It means also that stock solutions of almost any desired strength can be made from the more concentrated material. Synthetic phenol germicides can be formulated so that the finished product forms clear solutions in water and can also be manufactured in such a way that a milky emulsion is formed upon dilution for use.

These new disinfectants are virtually odorless and, therefore, can be perfumed or scented to suit the individual buyer's specifications. By the addition of pine oil, the disinfectant will have an odor almost identical with that of pine oil disinfectant. Of course, there are many other odors which can be used if desired such as eucalyptus, camphor, etc. Incidentally the perfuming of these new synthetic phenol disinfectants must be done with care. It has been observed that some essential oils have a very drastic effect on the phenol coefficient value of the product and reduce its germicidal potency greatly.

As mentioned previously, there are several types of synthetic phenols three of which are chlorinated phenols, benzolated phenols, and brominated phenols. Each of these three general types has many possible arrangements of the component parts. In other words, there are several chlorinated phenols (different combinations of chlorine and phenol), several combinations of benzolated phenols, etc. Research has shown that some of

by Jack Varley

BAIRD & McGUIRE, INC.

these materials are highly toxic to the skin, whereas others are almost non-irritating. This is a very important point and one which has concerned the disinfectant manufacturer probably more than anything else in the composition of these new products. If a disinfectant is to be used indiscriminately for almost any germicidal or antiseptic purpose, it is of prime importance that the dilute product shall not cause skin irritation or burning. The germicide should be of such a nature that a dilute solution of it could be virtually poured on the human body without causing skin inflammation or severe irritation. The complaint has sometimes been made in the past against other disinfectants, where they were used as an emergency antiseptic on cuts and wounds, that the disinfectant proved far more irritating than the injury being treated.

It is generally understood that a good germicide must be non-specific and highly effective in killing germs. There are many other applications to be considered, however, in a germicide in order that it be capable of filling the wide variety of applications necessary. For instance, the product should go into solution or emulsion easily in water and these solutions or emulsions should be non-staining; it should be effective in the presence of organic matter and comparatively non-toxic and non-irritating to the skin.

In addition, a mild odor or even a complete lack of odor, freedom from corrosive action on metals, and stability under ordinary storage conditions are also desirable features of a good germicide.

SYNTHETIC phenol disinfectants can be divided into two groups. First, those which are not intended for use on the human body and which are intended, let us say, for industrial use such as disinfection of floors, walls, restrooms, etc. Second, those which are intended primarily for hospital or institutional use where the disinfectant will at some time or other be used in the operative field or on the human skin.

Recently tests were made on rats to compare the relative toxicity of synthetic phenol disinfectants and cresol disinfectants. Results of these tests show that the non-irritating synthetic phenols are very much milder than cresol compounds (either technical or U.S.P.) as far as their action on the skin is concerned. (See Chart II).

Another series of tests was made on rats to check the relative lethal dosage of the synthetic phenol disinfectants as compared with cresol compound disinfectants. Results of these tests showed that the non-irritating synthetic phenol disinfectants were several times less poisonous than *Liquor Cresolis Saponatus U.S.P.* or cresylic disinfectants. This is of tremendous importance to the hospital and institutional buyer, as well as to the surgeon and practicing physician, who are constantly on the lookout for products which can be used indiscriminately for almost any antiseptic or disinfectant purpose without danger of skin irritation or burning.

Tests now being conducted seem to indicate that there are types of synthetic phenols and synthetic phenol disinfectants which can be placed in contact with the skin day after day for long periods of time with no more than a very mild irritation, which is of a temporary nature and which disappears when the contact with the synthetic phenols is removed.

It is obvious then, that utmost care must be taken in the selection of synthetic phenols before manufacturing the finished disinfectant. Nearly all synthetic phenols produce disinfectants which are non-irritating at the first use. However, a great number of synthetic phenols when made into disinfectants and coming into contact with the skin continually, have a decided tendency to set up a latent reaction or irritation which can become very serious. The disinfectant manufacturer should, therefore, choose his synthetic phenol with great care and make exhaustive tests to satisfy his own mind that the material is safe if it is going to be recommended for use on the human skin.

With the advent of synthetic phenol disinfectants, an entirely new field is opened. These new germicides will soon, no doubt, take their place along side of the coal tar, pine oil, and cresylic disinfectants. Instead of three major commercial disinfectants there will now be four, and for the duration of the war it appears that the newest addition to the family will be the only one which can be produced in large volume. It seems highly probable that these new germicides will rapidly gain such a strong foothold that they will, no doubt, continue to grow in popularity even after the end of the war, particularly in the hospital and institutional field.

IT should be made very evident that this data is not presented with the purpose of questioning the value of pine oil, coal tar, or cresylic disinfectants. They are still the most widely used commercial disinfectants and there are certain uses for these compounds which cannot be replaced by the synthetic phenol germicides. However, it is just a matter of time until the raw materials used in the manufacture of pine oil, coal tar, and cresylic disinfectants will be available in only very limited quantities, and when this happens the average disinfectant user will have no alternative but to change over to a partial degree to the synthetic phenol type of germicide.

Also of interest is the fact that whereas the average disinfectant manufactured from pine oil, coal tar, or cresol raw materials contains 80 or 90 per cent active ingredients and a maximum of approximately 20 per cent water, these new synthetic phenol germicides have almost reversed the situation. They consist of anywhere from 65 to 80 per cent water and from 10 to 25 per cent active ingredients. In other words, the synthetic phenols are very potent as germicides and it does not take a high concentration to gain a desired phenol coefficient value.

Conversely, when it comes to cleaning power, the pine oil, coal tar, and cresol disinfectants are superior, because they contain rather large percentages of soap, the balance being pine oil or coal tar acids and oils which are excellent solvents, and which also aid in removing grease and film when used

in scrubbing solutions. Where the disinfectant is intended for use primarily as a cleaner and deodorant, you cannot very well substitute a synthetic phenol disinfectant. When the consumer, however, wishes to buy a disinfectant for use strictly as such, a synthetic phenol product has many advantages over any other commercial product. There is the further likelihood that in the near future synthetic phenol disinfectants with a high soap concentration will be developed so that these products will offer excellent cleaning power as well as germicidal efficiency.

Naturally, these new synthetic phenol disinfectants do not have as great deodorizing properties (or odor covering properties of a mechanical nature) as do pine oil and coal tar disinfectants. A pine oil disinfectant contains approximately 70 per cent pine oil, and a synthetic phenol disinfectant with a pine odor contains only about 5 or 10 per cent of pine oil. The synthetic phenol disinfectant with a pine odor will kill germs just as readily and will kill more types of bacteria than the true pine oil disinfectant, but certainly will not hide or cover disagreeable odors as well. Neither will the synthetic phenol disinfectant with a pine odor clean or degrease as well as the true pine oil disinfectant.

Although these new disinfectants should by no means be expected to supplant pine oil and coal tar disinfectants they still have a very definite place and are badly needed. Now that they are available, the manufacturer and distributor of disinfectants should make the most of them and see to it that the consuming trade is acquainted with their merits. No doubt a number of people who heretofore did not use disinfectants because of what they called objectionable odor, will be glad to utilize these new products which are mild and pleasant in odor.

Some outstanding advantages of the synthetic phenol germicides over other disinfectants are:

First, they are extremely stable and do not deteriorate or lose their strength appreciably over many years.

Second, when manufactured properly they are physically stable and do not separate or in any other way decompose.

Third, exhaustive tests which are now being performed indicate, and I believe this point is the most important, that some of these synthetic phenol germicides are many times *less* poisonous than cresol compounds. This factor alone should be sufficient to convince the hospital purchasing agent, surgeon, or doctor of the superiority from a safety viewpoint of these new germicides.

Fourth, they are also much safer to handle because of their relative non-toxicity. This means that if the full strength synthetic phenol disinfectant should accidentally be spilled on the skin, no serious effects, very likely not even a mild irritation, would result, even though the disinfectant was not wiped off or removed immediately.

Fifth, most of the synthetic phenol disinfectants have very pleasant and agreeable odors or in their natural state have little or no odor to speak of. This point will mean a great deal to the average user who finds the odor of cresol or coal tar disinfectant very disagreeable, especially in strong solutions.

Sixth, they are not caustic or corrosive in their action and can be packed in almost any type of container with the exception of galvanized metal. Nearly all of the synthetic phenol disinfectants will darken somewhat on exposure to light (a characteristic phenol reaction) but this in no way affects the germicidal efficiency.

THERE is still a great deal to be learned concerning synthetic phenols and their formulation into disinfectants and a great amount of research to be done to discover the relative toxicity of the various phenol compounds. Just as there are many grades and formulations of pine oil disinfectants on the market today, there are also many grades and formulations of synthetic phenol disinfectants.

The following data is of interest because it points out the relative skin irritation values between commercial cresol disinfectants and synthetic phenol disinfectants.

Material:

(1) Liquor Cresolis Compositus U.S.P.

(2) 50% Cresylic Disinfectant Phenol Coefficient 5

(3) Synthetic Phenol Germicide, Type W, Phenol Coefficient 5

(4) Synthetic Phenol Germicide, Type A, Phenol Coefficient 5

The disinfectants were tested as described in the tentative specifications drawn up by the Navy (No. 51D6 (INT) as of January 15, 1942. *Section E2—Toxicity* states that "The minimum lethal dose for intraperitoneal injection of the disinfectant shall be greater than 0.1 ml./kg. of body weight, when tested as specified in paragraph F-2c."

The results of these tests are not complete, but sufficient work is finished to establish the relative positions of the various materials.

It must be kept in mind that these tests have been run over a relatively short period of time and do not indicate long time effect of disinfectant solutions on the skin and, of course, do not give a full picture of any latent reaction which might take place. They do indicate decisively, however, the marked difference in effect of the two types of disinfectant on the skin over short periods of exposure.

It is quite apparent, judging from intraperitoneal injections, that (1) and (2) are about five times as

CHART I

Results of Intraperitoneal Injection of a 1:10 Aqueous Dilution of the Disinfectants Results are given in terms of undiluted material

Material	*Number of 150-200 g. male rats used*	*100% Lethal dose ml./kg.*	*100% Survival dose ml./kg.*	*Approx. M.L.D.-50 ml./kg.*
(1) Liquor Cresolis Compositus	16	1.0	0.2	0.4-0.6
(2) 50% Cresylic Disinfectant	14	1.0	0.2 or 0.4	0.4
(3) Synthetic Phenol Germicide, Type W	16	5.0	2.0	3.0
(4) Synthetic Phenol Germicide, Type A	14	5.0	2.0	2.0-3.0

toxic as (3) and (4). Typical phenol tremors were noticed after all injections of (1) and (2) and none were noticed after (3) and (4). It should be noticed that neither (1) or (2) conforms to specifications as stated, and that (3) and (4) are well over the specified limit.

Dermatitis:

The test for dermatitis as described in the Navy specifications E-3 and F-2d is rather difficult to interpret. However, it was carried out as described. Materials (1) and (2) were found to be more irritating than (3) and (4). (1) caused a slight necrosis and discoloration of the skin after sloughing. (2) caused a slight necrosis and discoloration of the skin after sloughing. (3) caused superficial necrosis but no discoloration of the skin upon sloughing. (4) caused a slight superficial necrosis but no discoloration of the skin upon sloughing.

Conclusions:

Materials (1) and (2) were found to be more irritating than (3) and (4). Material (4) appeared to be less irritating than (3), and (1) and (2) were essentially similar.

Skin Irritation (Biochemical Research Laboratory routine procedure):

Each material has been or is being tested on rabbits by applying the materials undiluted, as 10 per cent aqueous solutions, and as 2 per cent aqueous solutions. The table below (Chart II) demonstrates results to date:

Conclusions:

It is apparent from the table that both the 50 per cent cresylic disinfectant and the *Liquor Cresolis Compositus* are definitely more irritating to the skin of rabbits than the type A germicide or the type W germicide. Type A germicide appears to be the best material and the one most unlikely to cause dermatitis.

Concluding, it is obvious that there is a tremendous market for the sale of these new synthetic phenol disinfectants and every step should be taken by the disinfectant manufacturers, distributors, jobbers, and retailers to see that the general public is made "disinfectant conscious" especially in times like these when it is of utmost importance that the health standards of the country be kept at a high level. With large groups of men and women concentrated in small areas such as defense plants, army camps, etc., sanitation should be given every consideration to see that disease and infection are kept at a minimum. Delays caused by sickness or infection to the worker can slow down production tremendously and with the many excellent disinfectants and antiseptics now available such delays are entirely needless.

CHART II

Material	*Concentration Per cent*	*Reaction*
Type A Germicide (4)	100	Moderate
Type A Germicide	10	Slight to moderate
Type A Germicide	2	Very slight
Type W Germicide (3)	100	Moderate
Type W Germicide	10	Slight to moderate
Type W Germicide	2	Slight
50% Cresylic Disinfectant (2)	100	Severe
50% Cresylic Disinfectant	10	Moderate
50% Cresylic Disinfectant	2	Slight
Liquor Cresolis Compositus (1)	100	Severe
Liquor Cresolis Compositus	10	Moderate
Liquor Cresolis Compositus	2	Slight

U.S.D.A. Studies Nornicotine

Nornicotine, an alkaloid closely related to nicotine in chemical structure and physiological action, has recently been a subject of study of the bureau of entomology and plant quarantine of the U. S. Department of Agriculture. In a review of the Department's studies, L. N. Markwood, of the division of insecticide investigations, summarizes the information on nornicotine as follows:

"Nornicotine appears to be more stable than nicotine, has a higher boiling point, and is less volatile with steam. Pharmacological tests indicate that in general it is less active than nicotine toward warm-blooded animals, but that toward insects (as judged by behavoir with *Aphis rumicis* L.) it is equally toxic, perhaps even superior. This conclusion is only provisional, however, as very few insecticidal tests have been made. The prospects for a supply of nornicotine are excellent, since a fairly rich source of it has been found in domestic tobacco. From an insecticidal point of view it deserves thorough testing by entomologists."

Rotenone Protection

Insecticide preparations of the type containing rotenone or similar light-sensitive materials of vegetable origin, are protected by addition of a finely divided red pigment to the insecticide powder. "Red muds" obtained as by-products in the manufacture of alumina are suitable. Jean Motte and Jean Promot. Canadian Patent No. 403,416.

Fungicide Testing

A modified procedure is outlined in which standardization and stabilization can be obtained by fastening 12-mm. glass circles to glass slides with petrolatum. This produces surfaces of definite areas onto which measured amounts of fungicides and spores are pipetted, either separately or in combination. *Phytopathology* 31, 1108-16; through *Chem. Abs.*

Mothproofing Agents

Fibers of animal origin such as wool, fur and feathers are protected against moths and similar pests by aromatic hydroxy compounds with at least one aliphatic radical of four or more carbon atoms. Such compounds are phenols, cresols, xylenols, guaiacols, hydroxybiphenyls and naphthols. Erik Schirm, to Deutsche Hydrierwerke A.-G. German Patent No. 705,246.

Rat Control

Prebaiting with rolled oats, corn sirup and linseed oil for six days is followed by poisoning with thallium sulfate. Juan E. Veve. *Rev. agr., ind. y com.*, Puerto Rico 33, 360-2 (1941).

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Effect of Temperature on RECOVERY OF HOUSEFLIES

By Craig Eagleson*

U. S. DEPARTMENT OF AGRICULTURE

THE commonly used fly-spray toxicants differ in their physiological action on houseflies. Pyrethrins and the Lethanes[1] are well known for their ability to produce torpor in insects shortly after application. Rotenone and rotenoids, on the other hand, produce an effect that is comparatively slow in inception but of much longer duration. The toxicological action of rotenone endures a long time, as though it caused irreversible changes within the insect. The effects of Lethane and pyrethrins are more transitory, as though the changes were due to reversible chemical reactions with the insect's protoplasm. It has been shown that the maximum duration of the torpor caused by pyrethrins is 5 or 6 hours at 30° C.[2] The maximum duration of torpor from Lethane is about the same. The effects of rotenone may last longer than 48 hours.

The failure of pyrethrins or Lethane in ordinary use to kill all insects that are "knocked down" is very important to the user of fly sprays embodying these toxicants. Many manufacturers add rotenone, rotenoids, or other substances to their sprays to improve the mortality observable 24 hours after application. It is a moot question whether an observation of mortality 24 hours after application is the best indication of the value of fly sprays to the average user. Certainly

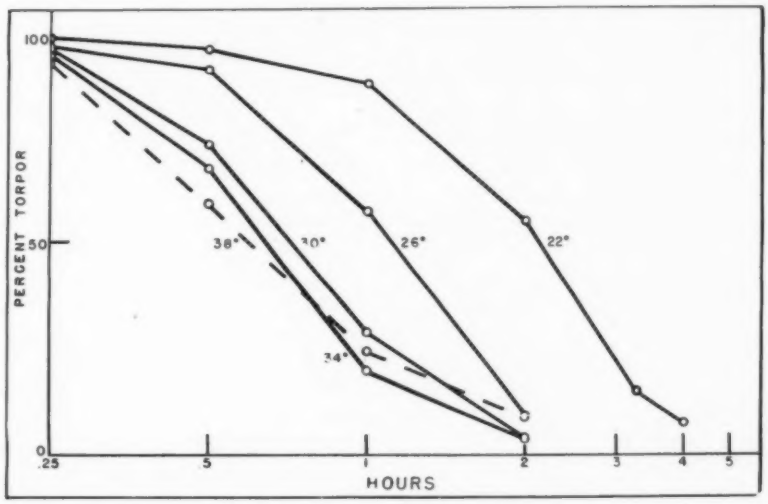
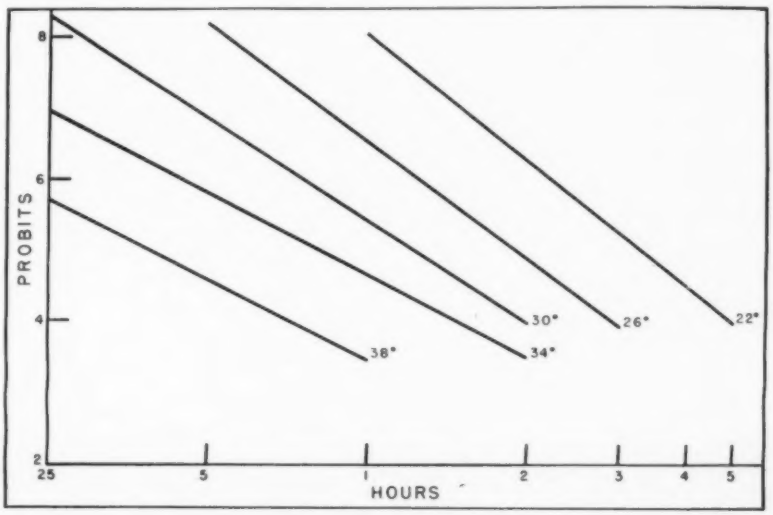


Figure 1—Time-torpor curves showing recovery of houseflies from hypnotic doses of pyrethrins at various temperatures. In A (above) torpor is given in percentages; in B (below) the per cent torpor has been converted to probits.



[1]The material used in this study and referred to as Lethane was beta-butoxy-beta'-thiocyanodiethylether.

*Resigned November 19, 1941.

[2]Eagleson, Craig. 1940. Livestock sprays, a rapid method for determining their toxicity. *Soap* 16 (7): 96-99, 117, illus.

the effects observable during the first hours following application are important. Practically, the record of recovery from sublethal doses might be useful in evaluating the efficacy of a spray. Periodic observations of the recovery following such hypnotic doses[3] can readily be made and the factors influencing the failure to kill studied. Temperature of the environment was found to be a prime factor.

An experiment was conducted to determine the effect of environmental temperature on the recovery of houseflies from sublethal doses of pyrethrins and Lethane. Pyrethrum extract was diluted with refined kerosene to a strength of 1.0 millimole per liter (35 mg. of total pyrethrins per 100 ml.). The Lethane was diluted with the same vehicle to 43 millimoles per liter (2 per cent by volume of Lethane 384)[4]. Roughly, the hypnotic dose of pyrethrins or Lethane as applied was one-third the minimum customary in commercial sprays.

A ventilated spray tunnel and a ventilated recovery cabinet[2] were employed in the treatment of the flies. The temperature was maintained at various levels with a tolerance of 0.5° C. and the relative humidity at 50 per cent. Lots of 50 flies confined in screen cylinders were sprayed with 1.5-ml. aliquots of the diluted spray and then placed in the recovery cabinet.

Observations of the number of flies affected by the spray were made 0.25, 0.5, 1, 2, and sometimes 3 and 4 hours after treatment. The percentage of torpid flies at each observation was converted to probits and plotted against the logarithm of time, each value being the average of 30 replications. Linear regressions were then fitted, the equations for which are as follows, where E is the expected torpor in probits, and X is the logarithm of time in hours times 100: (Table, below, right.)

Curves showing the recovery of the houseflies from hypnotic doses of pyrethrins are given in figure 1, *A*, and the corresponding graphs plotted from the equations are given in figure 1, *B*. Similar graphs for Lethane are shown in figure 2, *A* and *B*.

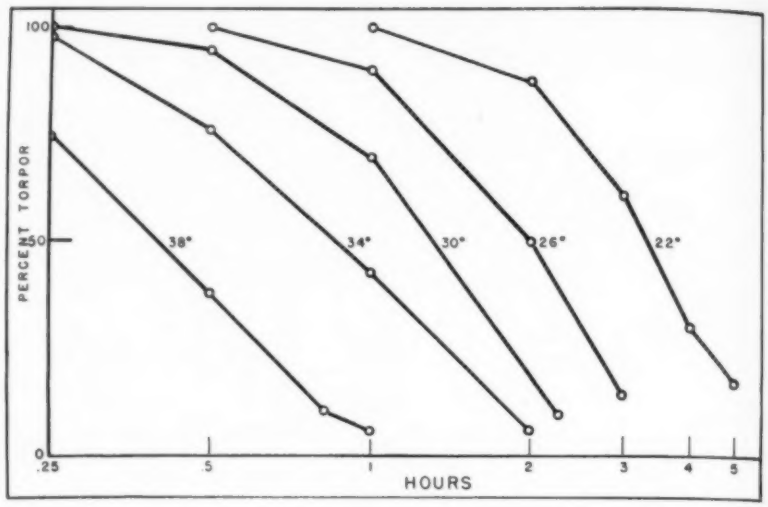
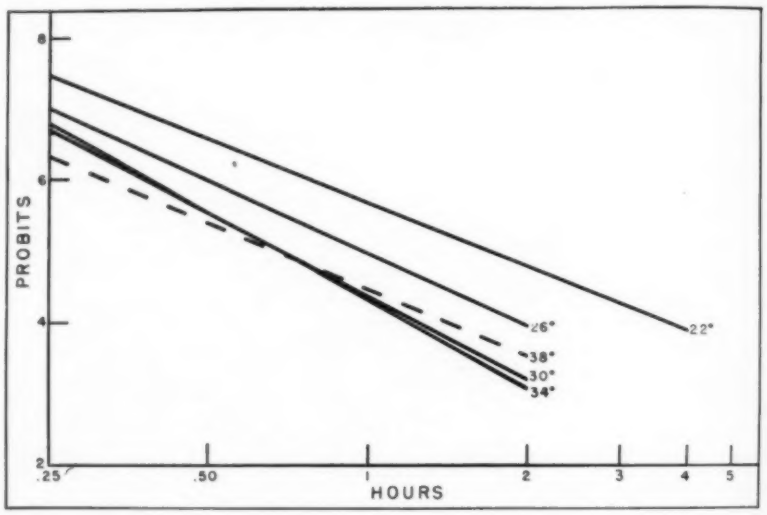


Figure 2—Time-torpor curves showing recovery of houseflies from hypnotic doses of Lethane at various temperatures. In A torpor is given in percentages; in B the per cent torpor has been converted to probits.



The effects of a hypnotic dose at summer temperatures do not exceed 2 hours. Therefore, the mean logarithm of time for the first four observations (0.7 hour) was used as an axis for comparing the mean torpor observed at the various temperatures (calculated as probits, then converted to percentages). In the case of pyrethrins at 22° C. the point was extrapolated. The resultant values are the expected means of torpor at the various temperatures (table 1).

Temperature	*Pyrethrins*	*Lethane*
22° C.	$E = (19.6 - 5.8\ X) \pm 0.2$	$E = (11.7 - 3.0\ X) \pm 0.4$
26° C.	$E = (17.5 - 5.5\ X) \pm 0.3$	$E = (11.8 - 3.4\ X) \pm 0.4$
30° C.	$E = (15.0 - 4.8\ X) \pm 0.3$	$E = (12.2 - 3.9\ X) \pm 0.3$
34° C.	$E = (12.3 - 3.8\ X) \pm 0.1$	$E = (12.5 - 4.1\ X) \pm 0.2$
28° C.	$E = (11.0 - 3.8\ X) \pm 0.2$	$E = (10.7 - 3.1\ X) \pm 0.3$

[3]Eagleson, Craig. 1941. Bioassay of livestock spray, using hypnotic doses applied in a spray tunnel. *Soap* 17 (5): 101, 103, 105, 107, illus.

[4]The dilution was based on the manufacturer's statement of the amount of active ingredient in his product.

Table 1—Expected torpor of houseflies 0.7 hour after application of a hypnotic dose of pyrethrins and lethane.

Recovery Temperature, °C.	Mean per cent Torpor after Spraying	
	Pyrethrins	Lethane
22	100.0	88.2
26	99.1	68.2
30	87.1	47.8
34	59.9	46.8
38	15.7	47.0

The probit values for mean torpor from pyrethrins when plotted against the logarithm of temperature yield a straight line. The values for mean torpor from Lethane similarly plotted appear to fit two straight lines intersecting at 30° C. (fig. 3). These curves point to a slight difference in the toxicological behavior of pyrethrins and Lethane.

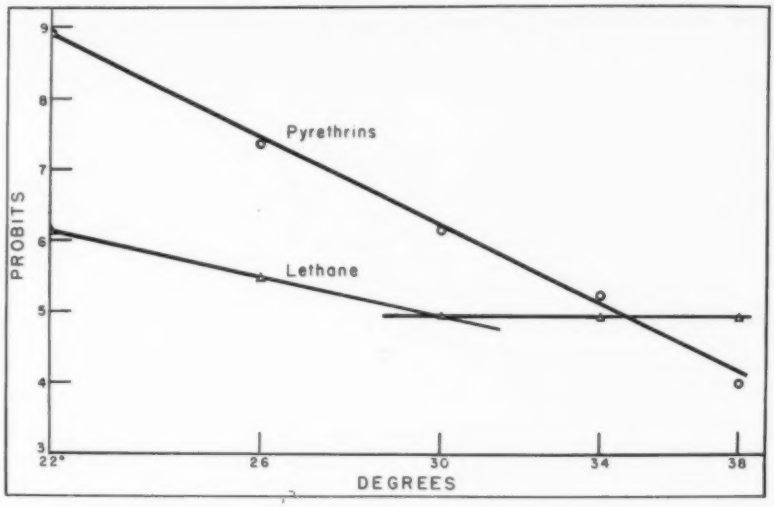


Figure 3—Mean torpor (in probits) of houseflies given hypnotic doses of pyrethrins and Lethane at various temperatures.

Another indication of this difference is found in the curves obtained by plotting the regression coefficients for the recovery curves at the various temperatures (fig. 4). Owing to the inexplicably aberrant value for the pyrethrins regression coefficient at 34° C., no line of best fit has been calculated. The coefficient for Lethane at 38° is also completely out of line. This value may represent a break in the curve and not an aberrant observation. The negative correlation of recovery slope with temperature (if the 34° observation is ignored) in the case of pyrethrins, and the positive correlation in the case of Lethane (for 22° to 34° observations) are believed to be important clues to a difference in toxicological action.

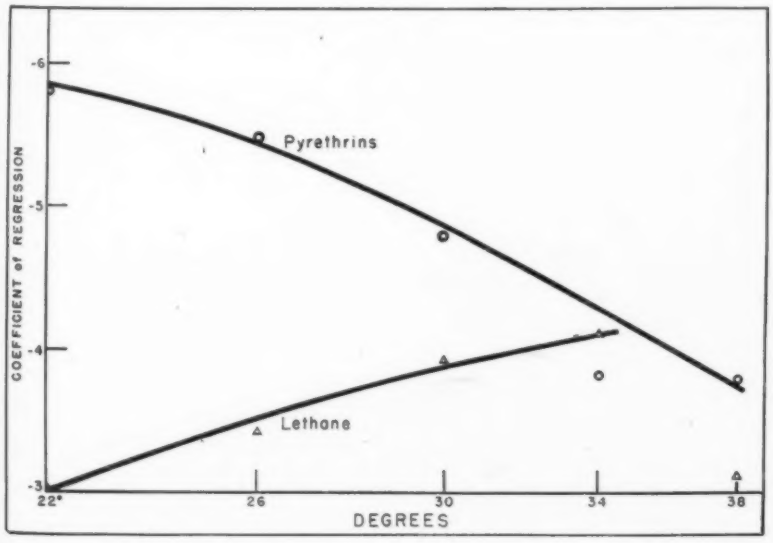
Practical conclusions can be drawn. Under these conditions and at these concentrations, at 34° C. a fly spray containing 1.0 millimole of pyrethrins per liter is equivalent in toxicity to a spray containing 43 millimoles of Lethane. Molecule for molecule, pyrethrins are the much more potent. At 38° C. the Lethane spray is more effective but below 34° the pyrethrins are more effective. Temperature exerts less influence on the recovery of houseflies sprayed with Lethane than it does on that of flies sprayed with pyrethrins.

The fact that both these insecticides can be made to produce, in houseflies, torpor that may endure 2 or 3 hours and be followed by complete recovery shows them to be hypnotic or soporific agents when used as fly sprays. They apparently produce only reversible biochemical changes and hence are much like narcotics in their action. It is, of course, not difficult to administer an overdose and produce death, but the death may be due directly to ensuing causes perhaps not more complicated than starvation for water or food during hypnosis. For this reason it would seem improper to class these toxicants as paralyzants or to state that they produce paralysis. Rotenone, on the other hand, seems to act in a manner typical of paralyzants.

This evidence supports field observations with livestock sprays compounded with pyrethrins and Lethane. It indicates the desirability of using these toxicants in greater concentration than necessary to produce the illusory effect of immediate torpor. The

(*Turn to Page* 141)

Figure 4—Trend among coefficients of regression from equations for computing expected torpor of houseflies following hypnotic doses of pyrethrins and Lethane at various temperatures.



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PYRETHRUM vs. ROACHES

By Dr. F. L. Campbell

OHIO STATE UNIVERSITY

PART II

BECAUSE the susceptibility of different species of insects to pyrethrum varies, it is desirable that the performance of pyrethrum insecticides that are to be used against roaches should be determined against roaches. As the principles of biological evaluation of insecticides are the same regardless of the insecticide or of the species of test insect, it does not seem necessary here to go into great detail on the mechanical aspects of the tests that have been proposed. It should be pointed out only that the value of a test depends on the reproducibility of its results and on the relation of those results to conditions of practical use of the insecticide. Reproducibility of results depends on the number and uniformity of the test insects and on the uniformity of all experimental methods and conditions.

Pyrethrum powder—

According to McDonnell *et al.* (1920), Glover, in 1864, described the first experiment in the United States on the insecticidal efficiency of pyrethrum. Glover is quoted as follows: "This powder had a curious effect on some Croton roaches we were experimenting with; when sprinkled over them or placed in a circle and they made to pass over it, for a few steps they appeared very lively, but some staggered, and after a few struggles fell over and soon ceased to live." This is of historical interest, but of course Glover did not attempt to find out whether one powder was better than another. Another early use of roaches as test insects for pyrethrum is that of Unger in 1888, cited by Gnadinger (p. 88, 1936).

Little serious effort has since been made to evaluate pyrethrum powder on roaches, perhaps because chemical methods for the determination of pyrethrins in pyrethrum powder became available before a need for careful biological evaluation was felt. Chemical methods are satisfactory for straight pyrethrum powder but may be inadequate for mixtures containing pyrethrum.

The testing of pyrethrum powders against roaches has been carried out either by dusting the roaches directly or by causing them to run over a surface on which the powder is distributed as uniformly as possible.

The use of direct dusting requires arrangements for depositing the same quantity of powder per unit area on each roach. Hockenyos (1936) assumed that he could control this quantity by applying the maximum amount that would adhere to the insects. Great variation in deposit probably resulted.

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Worsley (1936) made a greater effort to control deposits. He placed 10 roaches in a glass dish (bottom covered with filter paper) and then blew into the dish 0.1 gm. of finely ground powder. The dish was gently shaken at all angles to make sure that each insect came into good contact with the powder. His observations consisted of the sum of marks given each individual at frequent time intervals. The greater the effect, the higher the mark, ranging from 1 (obviously disturbed and very active) to 10 (dead). When all ten insects were dead the sum of the marks was 100. In the writer's laboratory Gilbert (1941) used a more precise direct dusting method than either of the above. A weighed charge of dust was blown up into a tall, insulated, celluloid cylinder in which it settled uniformly on German or American roaches in a container at the base of the cylinder. The roaches were exposed to the settling dust for a definite period of time and were allowed to run around in the dusted container for another brief period. They were then transferred to clean containers for observation on the per cent paralyzed and dead at frequent time intervals. Having accurate control of dosage, Gilbert succeeded in showing consistent differences in effectiveness in samples of different pyrethrin content.

At least as early as 1937, R. E. Heal of Rutgers University was testing powders against the German roach by forcing it to run over a dusted surface. His methods and results were not published. Results obtained by a similar method were published by Laudani and Sweetman (1941). American and German roaches were induced to run along the bottom of a paper trough 2 inches wide and 14 inches long. The bottom of the trough was covered as evenly as possible with about 4 grams of powder distributed from a salt shaker. While this setup is adequate for demonstrating gross differences in effect of different materials, it lacks desirable uniformity in deposit and in provision for giving each insect the same period of exposure to the treated surface. Direct dusting of caged roaches was also done without dosage control. The experiments served to show that pyrethrum powder is effective only when the insects are dusted directly. This is understandable for Hockenyos (1936) had previously indicated that the quantity of pyrethrum powder picked up by a roach on running over a dusted surface is insufficient to kill it. For evaluation of straight pyrethrum powder a direct dusting method is therefore desirable. It should be supplemented by a runway test when sodium fluoride or other protective insecticides are mixed with pyrethrum or are to be compared with it. However, a better runway test than that described by Laudani and Sweetman should be devised, if good control of dosage and exposure is to be obtained.

Impregnated powders—

While so-called inert dusts impregnated with pyrethrum extract are used for control of agricultural insect pests, they have not yet been much used for roach control. It is curious, therefore, that the first serious application of roaches as test insects for pyrethrum involved the testing of impregnated powders. Staudinger and Rusicka (1924), wishing to check their chemical work on the isolation and identification of the active principles of pyrethrum, treated German roaches with impregnated powders. According to Gnadinger (p. 119, 1936), "The pyrethrins were dissolved in ether, which was then mixed with flour, with gentle warming on a water bath, until the ether was evaporated. Five to six roaches were placed in a flask and dusted with a spoonful of the powder." Pyrethrum powder was used as a check. While this crude method of application suited their purpose, a more precise method, like that of Gilbert, described above, should now be used for impregnated powders. Incidentally, Gilbert's best sample was an impregnated (fortified) pyrethrum powder.

Pyrethrum extracts—

The evaluation of pyrethrum extracts, usually in solution in kerosene, against roaches has been attempted by many workers. The methods employed may be divided into two classes: (1) treatment of individual insects by injection, oral administration, or the application of drops or spray to the surface of the body, (2) application of a spray or settling mist upon groups of insects.

Treatment of individual insects is possible and undoubtedly could give good results, but in no case mentioned below has such a method been extensively employed by its originator or been used by others.

Saling (1928) was the first to propose a roach test for the evaluation of pyrethrum extracts. As already mentioned, this test involved the oral administration of measured volumes of mineral oil extracts of pyrethrum to American roaches. No comparative results were given.

Buchmann (1930) extended Saling's work to include oral injection and subcutaneous injection of oil solutions into the giant roach and the American roach. He described the effects of the injection, showed that effects are related to dose, and suggested noting the time of paralysis as a criterion of effect, but, like Saling, he did not give comparative results. Both methods are therefore merely suggested techniques that were not utilized.

The Insecticide Standardization Committee of the National Association of Insecticide and Disinfectant Manufacturers (Anon. 1932) presented a report on a "roach test" method for evaluating pyrethrum extracts. The procedure called for spraying individual German roaches under standard conditions and for criterion of effect taking the time from application till the roach "lies on its back and is unable to regain its feet,"—the so-called "paralyzing time." An example is given to show that paralyzing time is inversely proportional to the concentration of pyrethrins and that unknown samples give various results within the range of the known samples. Again we have the basis for a method, but no demonstration of its utility or reliability is given. While the criterion of "paralyzing time" is satisfactory for pyrethrum sprays, it alone is not sufficient for comparison of pyrethrum sprays with other sprays that may have a poor paralytic effect but a good lethal action.

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Nelson *et al.* (1934) proposed the placement of measured drops of oil base insecticide diluted with absolute ethyl alcohol on the center of the thoracic sternum of chilled, adult German roaches. After treatment the insects were placed in glass dishes with food and water and mortality counts were made after 24 hours. If 100 selected roaches per sample were used and the same dose was applied to each, the difference in effectiveness of two samples was represented by the difference in per cent mortality. However, no results with roaches are given. For general test purposes this is the most promising of the foregoing methods involving the use of individual insects, although it gives no information on paralyzing time.

It is easier to spray groups of roaches than to treat individuals,—if one has a large supply of roaches.

The first group spray tests of pyrethrum-oil involving roaches were made by Abbatucci and Roubaud (1926). Three samples were compared against German and oriental roaches on the basis of time to total paralysis or apparent death. The results were so variable that no conclusions could be drawn. Information is lacking for judgment of the value of the method.

Worsley (1936) published results of a few tests of a pyrethrum-oil spray against roaches made under standard conditions which are not completely described. Only 10 insects per test were used. The results show only that per cent mortality depends on concentration of pyrethrins.

Undoubtedly the first investigator to use large numbers of roaches as test insects for pyrethrum-oil and other liquid insecticides was Tuma (1938). At the time of his publication he claimed to have reared and killed more than 2,000,000 German roaches during a period of three years. In his paper he describes all the precautions that should be taken to rear uniform insects of known age (sex of insects was not mentioned, however), to apply a known volume of spray in a uniform manner under controlled conditions and to make objective counts of roaches down (moribund or dead) in 1, 24, and 48 hours. It is sufficient to say here that roaches in a large glass jar were subjected to direct spray and settling mist. At the time of the 1 hour count all roaches were transferred to a clean smaller jar with food and water. Unfortunately Tuma has never published results of comparative tests of different samples made by this method, but judging from his published results on the relation of age to susceptibility, the method should be satisfactory.

Recently McGovran and Fales (1942) have made an important contribution to technique of direct spray tests against German roaches. In order to control dosage accurately, the spray from a fixed nozzle above a rotating cage of roaches is interrupted by a partition that swings like a pendulum. The hole above the roaches is open to the spray only when the partition is at the extremities of its swing. Thus the dose is determined by the number of swings of the partition.

The writer and some of his students have been engaged in the development of roach tests since July, 1937, working with the National Association of Insecticide and Disinfectant Manufacturers and some of its members. A description of three group methods is given by Campbell, Barnhart and Hutzel (1941). As reprints are available for distribution, only the principles of these methods are outlined here.

(1) In Barnhart's settling mist method a definite volume of insecticide is sprayed into a tall, insulated celluloid cylinder. After the mist in the closed cylinder has ceased swirling and has started to settle, roaches in a container at the base of the cylinder are exposed to the settling mist for a definite period of time. In this way deposit of insecticide on the roaches is precisely controlled.

(2) In Barnhart's lard can method roaches in a standard perforated concealment box are sprayed with a definite volume of insecticide. Those that emerge from the box are subjected also to settling mist. This method has proved to be particularly suitable for determining the relative activating effect of different insecticides, but it is undesirable as a general test method.

(3) In Hutzel's modified chamber method roaches are confined in several small crystallizing dishes, which are placed in fixed positions on the floor of a Peet-Grady chamber. These positions spiral out from the center of the floor, so that each position is farther removed from the center than the preceding one. When an atomizer is fixed at the top center of the chamber to spray down upon the roaches in these dishes, the spray cone as it strikes the floor does not cover all dishes uniformly. There is a fixed dosage gradient from the center to the outer circle, and therefore the mean dose received by each dish diminishes as its distance from the center increases. In this way a graded series of mortalities may be obtained with each treatment, thus obviating the excessively high or low kills that may be obtained by single dose treatments. Much data must be obtained by this method and studied statistically before it can be recommended for general use.

Pyrethrum for Roach Control

WHEN, where, and how pyrethrum powder was first used for roach control is probably unrecorded. The earliest official recommendation of pyrethrum for this purpose that the writer has seen is to be found on page 93 of the bulletin on the principal household insects of the United States by Howard and Marlatt (1896). It would serve no useful purpose to cite all the subsequent bulletins in this and foreign countries in which similar recommendations have been made, because no practical experimental work with pyrethrum is described in any of them nor is the application of pyrethrum discussed in detail. For example, let us quote the latest recommendations of Back (1937): "Pyrethrum powder, used in the same way as sodium fluoride, is excellent when thoroughly applied to the hiding places or to the roaches themselves. It quickly stupefies the roaches. They usually turn on their backs, and although they live for some time, they eventually die if thoroughly treated. The stupefied roaches should be swept up and destroyed several hours after treatment before those least affected can revive. Pyrethrum powder is a safe remedy and will not injure man

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or pets. Upon exposure to air it loses its effectiveness after some days, and only fresh, finely ground powder should be used. It can be most thoroughly applied by means of an electrically operated dusting machine."

The foregoing recommendations are not based upon experimental work, but upon general experience, including opinions of pest control operators. Actually we do not know in a single instance how well pyrethrum powder will control a given roach infestation, when applied in known quantity and manner under known conditions. Contrast this situation with research and recommendations on control of agricultural crop pests. Field experiments may be made year after year on comparable plots before recommendations are made and recommendations are revised from time to time as new information is obtained. We have no such background for roach control. We know only that if we can place enough pyrethrum powder on every roach in an infested building, the infestation will be eliminated until eggs hatch or new roaches enter or are brought in. But we can get facts on the value of pyrethrum for roach control. It is worth while, therefore, to consider the design of an adequate "field test."

Suppose that we have a kitchen heavily infested with German roaches, —the site of our field test. We wish to know the degree of control that we can obtain by the application of a fresh, air-floated pyrethrum powder containing 1.3 per cent pyrethrins. The first step is to study the infestation and estimate its intensity. This might be done by taking flashlight photographs in the dark kitchen and counting roaches showing in different views. During the daytime a weak pyrethrum spray may be used to locate infested cracks and further to estimate the population of roaches. For the record the infested cracks may be marked in sketches or photographs of the room. The construction of outside and inside walls and floors should be noted.

After having learned as much as possible about the existing infestation, we are ready to apply the pyrethrum powder by power duster, the rate of output of which is known. The powder will then be applied in the daytime in the previously located cracks, the quantity applied being estimated by timing. An observer will be stationed in the kitchen, in all rooms surrounding the kitchen and out of doors outside of the kitchen. These observers will take timed notes on the behavior of roaches in the kitchen and on the number and behavior of roaches seen to run into the surrounding rooms and out of doors. The observers will count the numbers of paralyzed roaches and will take samples of all stages to determine whether they will die or recover. Frequent inspections will be made thereafter to estimate the remaining infestation, its location and build-up. Finally we shall have the data needed to publish facts instead of opinions.

The experiment outlined above may seem ridiculous to a pest control operator who, when he takes a roach control job, cannot play with it, even if he could afford to do so. Yet there was a situation on this campus where the above experiment could have been carried out, and if entomologists had the financial support for household pest research that they have been granted for agricultural pests, it would be quite feasible to make many such field tests against household pests. It must be pointed out, however, that it is more difficult to make comparative field tests against household insects than it is against crop pests, because it is almost impossible to arrange adjacent comparable test plots indoors, whereas this is done as a matter of course in tests of insecticides against insects attacking orchards, truck crops, etc. So the road to factual knowledge of roach control with pyrethrum or other insecticides is long and arduous.

The degree of control that is obtained with pyrethrum will certainly depend on the nature of the hiding places and on the placement of an adequate quantity of powder in those hiding places so that the roaches will be dusted directly or will become dusted as they attempt to move through a dusted crack. Mechanics of construction and application are vital.

Of all organic insecticides, the writer believes that pyrethrum is most effective for roach control. Pyrethrum has an essential place in roach control because of its safety and because of its prompt spectacular effect on the insects. Properly applied in the right situations, it has given excellent results and if retreatments are made as needed, a roach population can be held down to a very low level. Unfortunately it lacks the lasting protective effect of sodium fluoride and phosphorus paste and may drive into unexpected places roaches that can escape.

Bearing in mind the fact that contact action on the body of the roach by a sufficient quantity of available pyrethrins is necessary to cause its death, one may expect improvements in roach control to result from any means that will facilitate or increase this contact with pyrethrins.

The use of an impregnated (fortified) pyrethrum powder or an impregnated inert dust is indicated. It would seem desirable to lay down a thick band of pyrethrum powder all around the floor near the walls of a heavily infested room. Then dust the cracks or spray them with a pyrethrum-oil spray of high pyrethrin content. Escaping roaches would have to run through the mound of powder, insuring a lethal dose. This mounded band, if laid on paper, could be readily recovered and used again. Such barriers should be particularly valuable where automatic application of a fog of pyrethrum-oil by steam vaporizer or electric sprayer is employed.

TEA TREE OILS

The germicidal properties of a group of essential oils commonly referred to as "Tea Tree Oils" have made them of particular interest to antiseptic and pharmaceutical manufacturers. A survey of this interesting group of oils giving particular attention to their germicidal properties has been prepared especially for SOAP AND SANITARY CHEMICALS by Dr. Ernest Guenther of Fritzsche Bros., New York. It will appear in our July and August issues.

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on everything of interest to manufacturers of soaps, disinfectants, polishes, insecticides and related sanitary products . . . . . .

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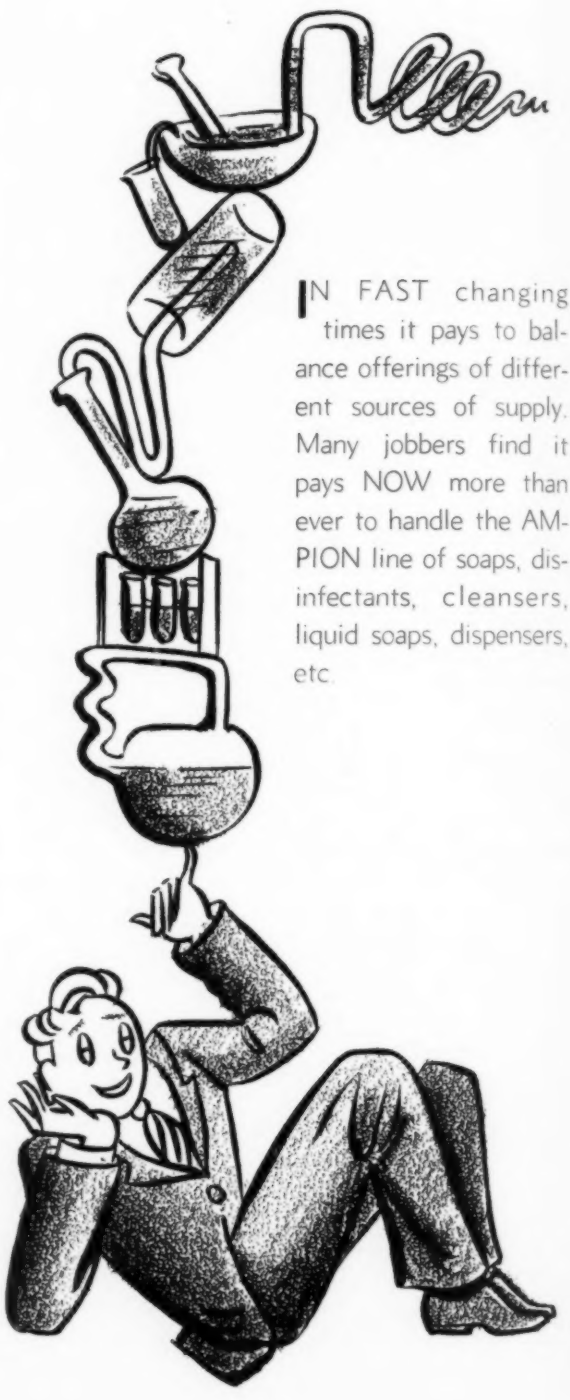

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Merely fogging a room with a pyrethrum-oil spray will not give perfect roach control. Recently Sullivan, Goodhue and Fales (1942) have experimented against roaches with an aerosol of pyrethrum oleoresin made by dissolving the oleoresin in Freon (dichlorodifluoromethane) and spraying the solution by pressure of Freon from a small steel cylinder. Good results have been obtained in a large hospital. This easy, safe and pleasant method of application will bear watching as it is developed further.

Treatment of single flat surfaces with a thin layer of pyrethrum spray or dust is of little or no value because the roach does not pick up enough to kill it and what insecticidal value the deposit has is soon lost.

In the above discussion the writer, like Dr. Back, is forced to rely on that indefinable background called experience, which is composed of laboratory data, opinions of pest control operators and observations of roach control practices. Likewise, when the editor of *Soap and Sanitary Chemicals* wanted to get some idea of the relative practical value of various roach powders, he had to rely entirely on the opinions of those to whom he sent questionnaires (Anon. 1940). Those opinions were probably derived from customer reactions. The consensus of opinion favored a mixture of pyrethrum and sodium fluoride.

Because everyone is guessing to some extent, the present writer's opinions may be faulty. Nevertheless his belief is reiterated that roaches can be controlled with pyrethrum alone and in no other way can roaches be controlled with greater safety to man and animals.

Summary and Conclusions

IN PREPARATION for research on the effect of pyrethrum on the locomotor activity of roaches, a survey was made of the literature on the action, testing and practical effect of pyrethrum on roaches. In discussing the action of pyrethrum on roaches, reference is made to its action on some other insects.

Against roaches pyrethrum acts as a contact insecticide. It does not act as a fumigant or stomach insecticide under conditions of use. Pyrethrum exerts a characteristic effect on the nervous system of roaches, resulting in muscular excitation, convulsions, paralysis and death or recovery depending on the dose. These effects on the adult female German roach result in premature dropping of the egg capsule.

Resistance of roaches to the effects of pyrethrum varies with age, sex, and species. Up to a certain age (probably the last nymphal instar) resistance increases, the adult female is more resistant than the adult male, and the larger species more resistant than the smaller. In the German roach, the eggs in the ootheca are more resistant to pyrethrum sprays than the females to which the oothecae are attached.

Suggestions are given for further research on the action of pyrethrum against roaches. Many problems remain to be solved in the field of physiology and toxicology.

The evaluation of pyrethrum insecticides against roaches is described under the following outline:

Pyrethrum powder
- Dusting of insects
- Permitting insects to run over dusted surface

Impregnated dusts
- Dusting of insects

Pyrethrum sprays
- Individual insects
  - Injecting, feeding, spraying, dropping.
- Groups of insects
  - Direct spray and settling mist.

As more work has been done on the last item than on any other, it is likely that a finished method of evaluation will emerge first from a treatment of groups of insects with a direct spray and settling mist. The principle of spraying insects confined at several fixed locations under a fixed spray cone is most promising, because, with one treatment, graded doses can be deposited, each mean dose depending on the distance of each sample of insects from the center of the spray cone.

Experimental data on practical roach control with pyrethrum is nonexistent. A suggested procedure for obtaining such data is given. The use of pyrethrum in roach control is discussed on the basis of general experience. Because pyrethrum offers no hazard to man and animals and is effective against roaches when applied in sufficient quantity to the bodies of the insects, it is believed to hold an important and unique place among insecticides used for roach control.

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(*Turn to Page* 141)

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To get Government business you should be on the mailing list of every Army, Navy and other Governmental Procurement Agency in the territory you serve. Information as to the names and addresses of these agencies and the procedure to follow can be obtained from the pamphlets "Selling the Navy" issued by the Navy Department, "Army Purchase Information Bulletin" issued by the War Department and "Doing Business with the Procurement Division" issued by the Treasury Department. If you do not have these booklets, write to Washington for copies. When you are on these mailing lists you will receive price inquiries and invitations to bid on the Government's requirements.

Recently, the Government has streamlined its procurement methods. Formal bidding has been abolished for the duration in many instances. Instead, the Government now issues price inquiries and purchases merchandise on negotiated contracts. These changes were effected when the WPB took over supervision of procurement and were made to promote speed. In awarding contracts, time of delivery may now be considered in preference to price. In order to utilize productive facilities to the fullest extent, each local branch of the WPB now keeps records of the facilities of suppliers in their respective areas. Any suppliers who have not filed information regarding their facilities with the nearest WPB branch should do so at once. They will give you the necessary forms to fill out, and this information will be used in determining whom to contact for supplies.

In addition, it must be appreciated that the situation has changed radically with respect to specifications. Heretofore, the Army, Navy and other Government agencies have insisted strictly upon buying only merchandise that meets their specifications. Today, due to shortages of materials, procurement officers are also buying other types of material. Army posts and Navy depots are permitted to buy small quantities of merchandise on the open market. You will find it worth your while to contact local procurement officers of the Army and the Navy. They are good prospects.

With doctors, dentists and nurses leaving their communities to go to war, and with the ever increasing menace of disease heightened by the possibility of air raids and enemy planned epidemics, our business, which is sanitation, stands as the principal bulwark protecting the health not only of the public, but of our armed forces as well.

Our country needs the service we render more today than ever before, yet due to certain things for which we ourselves are largely to blame, our hands are tied. The manufacture of other munitions of war is being expedited, while the particular munition which we contribute is threatened by seemingly too drastic curtailment.

Many of the basic raw materials of our industry are becoming scarce and difficult to obtain. Even substitutes for substitutes are becoming scarce. Steel containers are at present available only on the highest priorities, which few of us have to extend. The new PD-1X plan of the WPB does not mention sanitary supplies.

This condition is not so much the fault of the WPB as it is of ourselves. The WPB has been set up to deal with industries and while other industries have been actively represented, our has been left as an orphan, its needs unheeded and its importance unproclaimed. Unless our industry takes immediate steps to establish an active representation in Washington, it will suffer further disastrous curtailments in the allocation of materials during the coming months, curtailments far beyond the requirements of public interest, and as a result, many sanitary supply firms may be forced out of business to the detriment of the public health and welfare.

There are ways, of course, by which individual concerns can at present obtain some degree of recognition from the Government. Manufacturers can secure advance priority status for

*By Melvin Fuld**

FULD BROTHERS

* Address before 20th annual meeting Natl. Sanitary Supply Assn., Chicago., April 21, 1942.

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some of their requirements by operating under the Production Requirements Plan and distributors and jobbers can do likewise through PD-1X. But such recognition is not commensurate with the important part our industry should play in the winning of the war. Such recognition cannot be expected until we have adequate industry representation.

RECENTLY the War Production Board issued Order L-63 and Form PD-1X. Since they are of the utmost importance to jobbers and distributors, I am taking this opportunity of giving you *my interpretation* of them.

L-63. This is an order by the WPB (which became effective April 6) putting a limit upon the amount of merchandise a distributor, wholesaler, jobber or dealer may hereafter carry in stock. The restrictions are:

1. In the east, (Eastern and Central Time Zones) twice as much as the jobber's sales during the second preceding month.
2. In the west, (any other than Eastern and Central Time Zones) three times as much as sales in the second preceding month.

The above sales include only those from stock. Drop shipments made by manufacturers for the jobber may not not be included. The order applies to the following classes of merchandise:

Automotive Supplies
Aviation Supplies
Builders Supplies
Construction Supplies
Dairy Supplies
Electrical Supplies
Farm Supplies
Foundry Supplies
Grain Elevator Supplies
Hardware Supplies
Health Supplies
Industrial Supplies
Plumbing and Heating Supplies
Railroad Supplies
Refrigeration Supplies
Restaurant Supplies
Textile Mill Supplies
Transmission Supplies
Welding and Cutting Supplies

It is my opinion that the products which the sanitary supply industry handles should be classified as industrial supplies.

PD-1X. This is a form on which a person or firm operating under the restrictions of the L-63 order may report his requirements to replenish stock, month by month, to the War Production Board. The WPB, in turn will determine how much of each item the jobber will be permitted to obtain with a preference rating and a rating will be assigned to him for such amounts. If he needs more merchandise he will have to get it without a rating. Only requirements to cover sales from stock may be listed in PD-1X.

In approving the jobber's requirements, the WPB will take into consideration their end-use. In other words, the jobber's requirements will be approved only if he has been selling his stock to the Government, to war industries or for other purposes considered essential to public health and welfare. *Non-essentials* will not be allowed.

It is expected that soon many of the blanket priority orders like P-100 will be abolished. As a result, manufacturers will be forced to operate under the Production Requirements Plan and jobbers, distributors, wholesalers, or dealers will be forced to operate under the PD-1X plan.

It is impossible to exaggerate the importance of order L-63 and Form PD-1X to a jobber. If he carries inventories in excess of the quantities permitted under L-63 he will be violating the law and subject to heavy penalties. If he ignores Form PD-1X and fails to secure priority status for his requirements, in my opinion, it will only be a question of time until he will have sold himself out of business.

Many raw materials are already under strict priority control and others are being brought under priority control as rapidly as possible. Jobbers are urged to secure priorities and extend them to their suppliers so as to expedite deliveries. Under the regulations of the WPB it is mandatory for suppliers to fill rated orders before unrated orders. Any manufacturer who fills an unrated order ahead of a rated one violates the law and is subject to heavy penalties.

L-63 order at present applies only to distributors who carry an inventory of $10,000 in one class of items, or $20,000 in all items. It would be very wise, however for every jobber to set up his books so that the figures required under L-63 can be given. A proper accounting and inventory set up will pay dividends during the troubled times ahead of us.

◆

Reviews Entomology Advances

Recent "Advances in Entomology" are summarized by C. H. Richardson, of the Iowa Agricultural Experiment Station, Ames, Iowa, writing in the February 25 issue of *Chemical and Engineering News*. Liberally documented, the article summarizes briefly noteworthy developments of the past year or so in the fields of inorganic stomach poisons, organic stomach poisons, contact poisons, termite control, plant insecticides, pyrethrum, rotenone, nicotine, wetting, spreading, and adhesion of sprays, fumigants, attractants, repellants, and testing mehods. Reprints of the article are available.

◆

Indandiones as Insecticides

The acylated 1, 3-indandiones are very toxic to houseflies when tested according to the Peet-Grady insecticide bioassay method. It was found that the insect toxicity of the acylated indandiones was increased as the number of carbon atoms in the acyl radical was increased from 2 to 5. Thereafter the activity toward flies decreased. The isomeric valeryl-1, 3-indandiones exhibited powerful insecticidal action approaching that of the pyrethrins. However their action is not sufficiently rapid for use alone in contact fly sprays. Their application appears to be as a substitute for the major portion of pyrethrum extractives, especially in the more concentrated insecticides. L. B. Kilgore, J. H. Ford, and W. C. Wolfe. *Ind. Eng. Chemistry* 34, 494-7 (1942).

◆

Poison for White Ants

The following composition is used for combating white ants: arsenic 25 per cent, Paris green 10, bran and treacle 45, cacao 10 and dried milk 10. The bran is moistened with treacle, baked dry and ground to a powder. The powder is mixed with the other ingredients, then ground again. Wm. J. McGowan. Australian Patent No. 109,378.

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NEWS...

West Appoints Auerbach New Mgr.

Willis Auerbach, formerly manager of the Philadelphia and Pittsburgh branches of West Disinfecting Co., Long Island City, N. Y., was recently appointed general sales manager for the company. Mr. Auerbach makes his headquarters at the West home office.

Pioneer Offers Roach Powder

Pioneer Mfg. Co., Cleveland, has announced a new roach and ant powder for institutional use. Using pyrethrum as the killing ingredient, it also incorporates an attractant. The product is packaged in 6- and 12-pound lots and a spray gun is supplied free with purchases.

Abandon Insecticide Coloration

Proposed regulations recently under consideration in the State of Maryland, which would have required addition of color to white arsenical dusts and fluorides, have been abandoned for the duration of the war because of the present uncertainties of supply of color lakes. The Insecticide and Fungicide Committee of the Manufacturing Chemists Association conferred with Maryland officials at the time of consideration of the proposal to require coloration, and their recommendations were instrumental in effecting postponement of the color requirement.

Flanagan Back at Work

M. J. Flanagan, vice-president of Federal Varnish Co., Chicago, is reported back on active duty after recuperating from a recent operation.

Dr. Roark Moved to Beltsville

Dr. R. C. Roark, in charge of Insecticide Investigations of the U. S. Department of Agriculture, is now located at the Beltsville Research Center of the Department of Agriculture at Beltsville, Md., having been moved from Washington. His new address is Room 104, South Laboratory Building, Beltsville Research Center, Beltsville Center, Md. His new phone number is Warfield 4200, Extension 148. Dr. Roark who has been called the "father of rotenone," and who is widely known in the insecticide industry for his researches in rotenone materials, has sent word that he will be glad to consult with all visitors on insecticides and related materials at his new office. Beltsville is 17 miles from Washington on the Baltimore Highway.

DR. R. C. ROARK

Protex Service Moves

Protex Service, Chicago, pest control, has recently taken up quarters at 129 S. Laflin St. Former address of the company was 608 S. Dearborn St.

Cadie at Premium Show

Cadie Chemical Products, Inc., New York, occupied a booth at the 12th annual National Premium Buyers Exposition in the Palmer House, Chicago, May 4 to 8, with A. J. Meyers, company treasurer, in charge. Featured in their colorful display was a new Cadie military polishing cloth, designed for army and navy use, in cleaning and polishing metal buttons, insignia, etc. Also displayed was the well-known line of chemically treated polishing cloths, for silver and metal, furniture, shoes and leather, auto bodies and enamel surfaces, as well as their "Moth-Vamoose" sachets. Another recent new product, Mr. Meyers said, is a jeweler's rouge polishing cloth, with a double surface, one for polishing, the other for finishing, packaged in a handy oil cloth container and sold through jewelry and silverware houses.

Offer New Wiping Solvent

Curran Corp., Malden, Mass., has just placed on the market a new hand-wiping safety solvent for use in replacement of naphtha, gasoline and kerosene for grease cleaning operations in ordnance factories. The new solvent is to be marketed under the trade name Gunk XP-92.

CSA Opens Golf Season

Members of the Salesmen's Association of the American Chemical Industry held their opening golf tournament of the 1942 season at Garden City Country Club, Garden City, L. I., June 2nd. Charles F. Alexander, chairman of the entertainment committee, has announced that the second tournament will be held on July 14th at the Bonnie Briar Country Club, Larchmont, N. Y.

Issue Insect Control Bulletin

"Current Contributions on Insect Control" is the title of a 62-page bulletin issued early this year by the New York State Agricultural Experiment Station, Geneva, N. Y. Included are 21 papers by station entomologists discussing results of investigations involving use of various insecticides for control of specific insect pests of agricultural crops.

Vaporine Offers New Polish

Vaporine Co., Chicago, has announced a new polish and cleaner in paste form for use on aluminum ware or any polished metal except silver plate. It is said to contain no acids, alkalies or other ingredients harmful to metal and to be non-inflammable and non-poisonous.

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OUR OFFER—We shall be glad to send you liberal samples of all four and let you decide which is best for your purposes.

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If your spray presents special problems, send us an unperfumed sample and let us work out an odor suitable for your particular product.

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Revise Solvent Ratings

New preference ratings for all permitted uses of chlorinated hydrocarbon solvents were issued May 2 by the Director of Industry Operations. B-2 ratings are assigned for packaged spotting and cleaning preparations, for dry cleaning establishments, for manual cleaning of other than metal parts of electrical equipment and for degreasing machines other than those used on Army and Navy contracts. B-2 ratings are restricted to 50 per cent of average monthly consumption in the base period set up in the original order M-41.

The Order extends A-10 ratings for such solvents to be used in the fumigation of stored products, including grain; for charging and recharging fire extinguishers; for laboratories, hospitals and public institutions; for processing and manufacturing food, chemicals, rubber, petroleum, and plywood; for cleaning metal parts of electrical equipment; for the manufacture of refrigerants; and for degreasing machines used in the manufacture of war materials.

No other uses of chlorinated hydrocarbon solvents are permitted with the exception that any person may purchase up to one gallon without a preference certificate or a rating.

Offer Beeswax Substitutes

Innis, Speiden & Co., New York, have recently developed two new substitutes for beeswax to meet the scarcity caused by delayed arrivals. Of the two replacements, one is light colored and the other somewhat darker.

Mitchellite Moves

Mitchellite Laboratories, San Antonio, Texas, insecticides, cleaners, disinfectants, and other sanitary supplies, have just been moved from 606 Delaware St. to 634 Avant Ave.

Toirot to Address NAIDM

An added speaker to address the mid-year meeting of the National Association of Insecticide & Disinfectant Manufacturers, being held at the Edgewater Beach Hotel, Chicago, June 8, 9 and 10, is Dr. Paul Toirot of the Office of Price Administration. He was to talk on "Questions on Price Ceilings As They Affect Insecticides and Disinfectants." A question and answer session was scheduled to follow the prepared address. Word of Dr. Toirot's designation by OPA as an NAIDM convention speaker was received too late for inclusion in the program of the meeting which appears elsewhere in this issue.

New Quarters for Sweeney

A new and modern building has just been occupied by W. R. Sweeney, Manufacturer, Salisbury, Mo., makers of "Sweeney's" poison wheat, a rat poison. R. C. Sweeney, general manager of the company which was organized thirty-five years ago by his father, was host at an open house in the new quarters May 15 and 16.

Await Govt. Specifications

The U. S. Department of Agriculture is reported to have completed modifications in specification 311-B (Specification of the Treasury Department for Liquid Insecticide) and to have drafted a new set of specifications calling for a straight AA insecticide, for use in purchasing insecticides by the Army and Navy and other government agencies. The work has been in charge of Lon A. Hawkins, Division of Control Investigations, Bureau of Entomology and Plant Quarantine, Washington. Final approval on the specifications is expected momentarily, and copies will probably be available early in June.

Rid-O-Moth Changes Name

Rid-O-Moth Co., S. Kearny, N. J., paradichlorbenzene and naphthalene, has changed its company name, effective June 1, 1942, to Standard Chlorine Chemical Co. Officers and personnel of the company remain the same, only the company name being changed.

Plee-Zing Ends "No Odor" Claims

Plee-Zing, Inc., Chicago, has just entered into an agreement with the Federal Trade Commission to desist from representing that its product, "Plee-Zing Bowl Cleaner," will eliminate odors from toilet bowls.

New Insecticide Concentrate

A new insecticide concentrate, "Thanite," has just been announced by the Naval Stores Department of Hercules Powder Co., Wilmington. The new product is described chemically as the thiocyanoacetate of a secondary terpene alcohol. Derived from the southern pine, an ample domestic source of supply is assured. According to the manufacturer Peet-Grady tests of the new material show that in dilutions as low as 1.75 per cent it produces a B-grade insecticide, while in dilutions of 2.5 per cent, 3 per cent and 5 per cent, it produces AA-grades of insecticide of plus 19, plus 24 and plus 41 points respectively. Laboratory tests are said to indicate that "Thanite" sprays are not toxic under conditions of normal use. They are stable in the usual insecticide containers and even to sunlight through flint glass bottles. Properly diluted, the new material is said not to increase the tendency of base oils to stain or discolor wall paper or fabrics. Experimental work on "Thanite" in fly sprays has been carried out at the University of Delaware under the direction of Dr. L. A. Stearns and in live stock sprays by the Kansas State College of Agriculture under the joint direction of Drs. Roger C. Smith, F. W. Atkeson and A. O. Shaw.

Calkins 50th Anniversary

William B. Eddy of Rochester Germicide Co., Rochester, N. Y., sanitary products, advises us that a surprise party the evening of June 7th was given to celebrate the 50th wedding anniversary of Mr. and Mrs. D. N. Calkins. Mr. Calkins organized the Rochester Germicide Co. in 1888, developing the business to an organization which now covers the northeastern quarter of the United States. Until 1938 he was president of the company, then becoming chairman of the board, in which position he continues in an active capacity with the business.

Master Laboratories Move

Master Laboratories, Inc., Omaha, formerly located at 27th and N. Streets, moved last month into new quarters at 2523 Leavenworth St.

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America's all-out Victory Program requires ever increasing quantities of coal-tar chemicals for which Barrett is a key source of supply. All Barrett's facilities and 88 years of manufacturing experience are being utilized to keep production at top limits. But because so many Barrett Chemicals are vital to winning the war, we ask the indulgence of our customers in civilian industries if deliveries are delayed.

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In addition, Deo-Base itself is remarkably stable, and has stabilizing action on the killing power of pyrethrum. Other all-round advantages include high wetting action—freedom from staining and minimum residue—and balanced particle size to assure suspension for the longest possible periods.

Write today for full details about Sonneborn's Deo-Base—and remember the Sonneborn Technical Service can be a practical aid in developing the full possibilities of your products.

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Sanitary Products at Hospital Show

SANITATION products and cleaning equipment for the hospital were exhibited by six manufacturers at the Tri-State Hospital Assembly, held at the Stevens Hotel, Chicago, May 6 to 8.

Refinite Corp., Omaha, Nebr., demonstrated the action of their zeolite water softener, with B. M. Beeler, Chicago district manager, in charge. Mr. Beeler also participated in sessions of hospital laundry managers and engineers, where he discussed "Type and Maintenance of Water Softeners."

Midland Chemical Laboratories, Dubuque, Ia., introduced a new "Germolyptus" disinfectant for hospital cleaning uses. Staffing their booth were C. F. Hillyard, sales manager, Walter L. Brown of the Hospital Sales department, and Lee Jacobi, Chicago representative.

Vestal Chemical Laboratories, Inc., St. Louis, featured surgical and baby soaps. F. C. Freesmeier, sales manager and Al Roderman, both of St. Louis, and Al Almquist, Chicago, directed the presentation.

J. B. Ford Sales Co., Wyandotte, Mich., presented several new products, including "F-100," for washing painted surfaces, and "Wyandotte Color-Spark," for safe washing of colored fabrics. Booth decorations included photographs showing right and wrong ways for utilizing company products in washing dishes, cleaning wall paper, etc. John L. Sullivan and M. R. Aronson, of the Chicago sales office, in charge.

Huntington Laboratories, Huntington, Ind., assembled a display of equipment which included their Levernier portable soap and alcohol dispenser with foot-pedal control, and the "Silent Huntington," hospital type, floor machine, for scrubbing and polishing. Hospital surgical soaps, germicides and disinfectants were also shown. M. W. Levernier, manager, hospital department, had charge, assisted by F. H. Gilworth and Harry Hanger.

Walter G. Legge Co., Inc., New York, had a duplicate of their display of non-slip floor polishes and maintenance materials which was being shown simultaneously at the Mid-West Safety Conference at Hotel Sherman.

Five manufacturers of soaps and sanitary supplies participated in the trade show staged in connection with the 20th annual Midwest Safety Conference at Chicago's Hotel Sherman, May 5 to 7.

U. S. Sanitary Specialties Corp., Chicago, promoted powdered and liquid soaps, disinfectants and non-slip floor treatment products. J. H. Clark, city sales manager was in charge, assisted by H. A. Myers and A. C. Aronson.

G. H. Packwood Mfg. Co., St. Louis, Mo., featured their "Pax" heavy and light duty powdered hand soaps with H. J. Hoffman and H. B. McInnes of the Chicago sales office in charge.

West Disinfecting Co., Long Island City, N. Y., displayed a line of disinfectants and insecticides for plant sanitation, together with powdered hand soaps for shop use and protective creams, variously formulated to combat skin diseases caused by different irritants. Special attention was directed to a new product, "Sulpho Hand Cleaner," a sulphonated castor oil skin cleaner, recommended for use by workers exposed to petroleum oils, distillates and volatile solvents. R. O. Jackson, Chicago district manager, was in charge.

Walter G. Legge Co., Inc., New York, demonstrated their "Leco" and "Safco" non-slip floor polishes, with Jack Glenn, Chicago district manager in charge, assisted by D. Kelstrom.

Sugar Beet Products Co., Saginaw, Mich., exhibited their "Formula S B S-11," a powdered hand soap for dermatitis control. Standard Washroom Equipment Co., Saginaw, Mich., showed their line of stone wash fountains for factory use.

◆

Cite "Zonite" Advertising

Zonite Products Corp., New York, is charged in a recent Federal Trade Commission complaint with use of false and deceptive claims in the advertising of "Zonite" liquid and "Zonitors." Specific claims to which the commission objects are that the products are harmless for use and that they are effective in destroying germs and bacteria in all cases.

◆

U. S. Sanitary Fire Loss Low

Officials of U. S. Sanitary Specialties Corp., Chicago, thanked a strong west wind for saving their plant from complete destruction when fire broke out on an upper floor of the five-story building at 433-437 S. Western Ave., last month. The fire originated near the east end of the building and the strong gale blew the flames out of the structure, so that only a small section was endangered by the blaze. Building damage was estimated at $20,000. Company loss of equipment was not serious, officials stated, but a considerable stock of soaps, perfumes and disinfecting materials had to be discarded because of water and smoke damage.

◆

Explosion Kills Beacon Head

Leonard V. Mendelsohn, owner of Beacon Chemical Co., manufacturer of soaps and disinfectants, New Brunswick, N. J., was killed recently, in an explosion which demolished the rear of the two-story brick building occupied by the plant at 192 French St. At least ten other persons were injured in the blast. Police were unable to establish the cause of the explosion.

◆

Rochester Engineer in CWS

Clarence W. Crowell, formerly chemical engineer with Rochester Germicide Co., Rochester, N. Y., recently went to Washington, D. C., to become buyer in the procurement division of the Chemical Warfare Service, U. S. Army. His official title is lieutenant colonel.

◆

Crown Cork Elects McManus

Charles E. McManus, Jr., was elected a vice-president of Crown Cork & Seal Co., Baltimore, at the recent annual meeting of the board. He was formerly assistant secretary and assistant treasurer of the company.

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Low boiling, high boiling and symmetrical Xylenols. In tank cars and drums from Indianapolis and Newark.

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STARLIT BEACH WALK

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And his Orchestra

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WILLIAM M. DEWEY, President
PHILIP J. WEBER, Resident Manager

EDGEWATER BEACH HOTEL
On Lake Michigan
Chicago

The elegantly appointed anteroom of a distinguished Chicago mansion serves as the reception room of the new offices of Velsicol Corporation, manufacturers of synthetic hydrocarbon insecticides. Velsicol recently took over the old mansion at 120 East Pearson Street and renovated it, creating attractive and modern new quarters.

The well-lighted and immaculate testing and research laboratory of the Velsicol company is also installed at the same address. Until recently the offices were at 3542 North Kimball Avenue. The company's plant, where "Velsicol AR-50" and "AR-60" are manufactured, is located in Marshall, Illinois, about 160 miles south of Chicago.

Ceilings on Insecticides

Household insecticides were added May 18 to the restricted list of summer seasonal goods on which retailers may establish their ceiling prices through methods provided by Maximum Price Regulation No. 142, Office of Price Administration. Under the regulation, a retailer, in order to arrive at his ceiling prices is required to apply last season's percentage mark-up to a cost figure that cannot be more than the manufacturer's highest price in March and may be less. The retailer must take the lower of: the average cost to him of the commodity on purchases made between the close of his last year's summer selling season and the opening of this year's, or May 11, 1942, whichever date is later; or the net price he would have to pay to replace the commodity after May 11, 1942. To the lower of these the retailer may add his last year's average percentage mark-up on the same commodity or if he is unable to establish this mark-up, then the average mark-up in the department in which he sold the same or a similar commodity during the last summer selling season.

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Erratum—Rotenone Story

Paragraph three of the article entitled "Prohibit Rotenone Use in Household Products," appearing on page 115, of the May issue of *Soap & Sanitary Chemicals*, which reads:

> "(1) Use by the Army or the Navy as a delousing agent, or the manufacture of any preparation for use by the Army or the Navy";

was incorrectly quoted from Conservation Order M-133. It should read as follows:

> "(1) Use by the Army or the Navy as a delousing agent, or the manufacture of any preparation for such use by the Army or the Navy."

Proprietary Assn. Meets

The 60th annual convention of the Proprietary Association of America was held May 18, 19, and 20, at the Biltmore Hotel, New York. The three-day meeting was divided into a scientific section, a foreign trade section, a veterinary section, and four general sessions. Dr. George F. Reddish, of Lambert Pharmacal Co., St. Louis, served as chairman of the scientific section. Among the speakers at the meeting were Dr. Thomas Lewis, of S. B. Penick & Co., New York, who gave "A Progress Report on the Supply of Botanicals"; Dr. A. E. Badertscher, of McCormick & Co., Baltimore, who spoke on "The Effect of the War on Substances Used Extensively in the Veterinary Field"; and Charles C. Concannon, bureau of foreign and domestic affairs of the U. S. Department of Commerce.

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TAR ACID OIL

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Unusually High in Tar Acids
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CCl_2F_2 as Insecticide Carrier

The method of controlling mosquitoes in confined spaces using insecticides in solution in liquified dichlorodifluoromethane is described in an article entitled "Toxicity to Adult Mosquitoes of Aerosols Produced by Spraying Solutions of Insecticides in Liquified Gas," appearing in the February issue of the *Journal of Economic Entomology*. Aerosols of pyrethrum oleoresin and sesame oil were prepared by allowing a solution of these materials in dichlorodifluoromethane to escape through an atomizing nozzle. The solvent evaporates very rapidly and leaves the insecticide suspended in the air. According to tests performed by W. N. Sullivan, L. D. Goodhue, and J. H. Fales, of the U. S. Department of Agriculture, bureau of entomology and plant quarantine, the results indicate that the method shows much promise for destroying adult mosquitoes under certain conditions, especially for the control of mosquitoes on airplanes. The volatile solvent used is noninflammable, nonpoisonous, nonstaining, and has no disagreeable odor. Many other insecticides than pyrethrum oleoresins can be applied by this method, the authors conclude. They include nicotine, thiocyanates, rotenone, and phenothiazine.

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Mothproofing Wool

Colorless halogen - substituted urea sulfonic acids of the benzene series can be used to protect wool against moths. The products are fast to washing. J. R. eGigy A.-G. British Patent No. 536,011.

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Pyrethrum vs. Roaches

(*From Page* 127)

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*The writer is grateful to Mabel Colcord and Carlo Zeimet of the Library of the Bureau of Entomology and Plant Quarantine, U. S. Dept. Agr., for providing translations from these papers.

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Recovery of Houseflies

(*From Page* 117)

addition of a secondary toxicant which would prevent recovery from the torpor is a promising alternative to the use of higher concentrations of the primary toxicant.

Summary

The failure of pyrethrins and Lethane, in ordinary use, to kill all insects that are stupefied led to an investigation of the effect of temperature on recovery from the effects of these toxicants. Equations and graphs depicting recovery from applications of pyrethrins and from Lethane (beta-butoxy - beta' - thiocyanodiethylether) administered at temperatures ranging from 22° to 38° C. are presented.

Temperature exerts less influence on the recovery of houseflies sprayed with Lethane than on that of flies sprayed with pyrethrins.

From the recovery curves it is concluded that these toxicants are like narcotics in their action and, to insure death, must be administered in doses considerably stronger than necessary to produce complete torpor.

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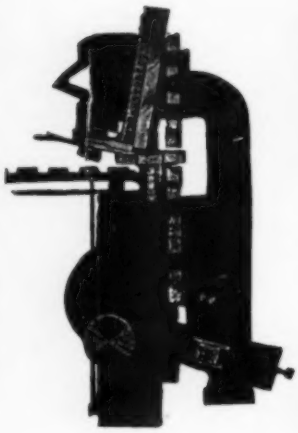

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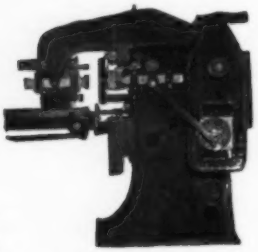

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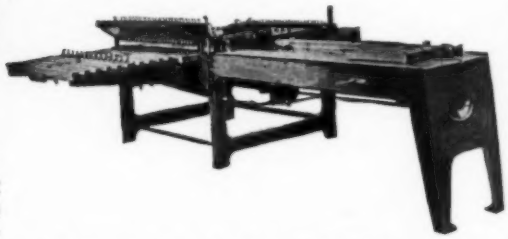

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H-A, 1500, 3000, 4000, 5000 lbs. capacity. Steam Jacketed Crutchers.

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2, 3, 4, 5 and 6 roll Granite Toilet Soap Mills.

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Proctor & Schwartz Bar Soap Dryers.

Blanchard No. 10-A and No. 14 Soap Powder Mills.

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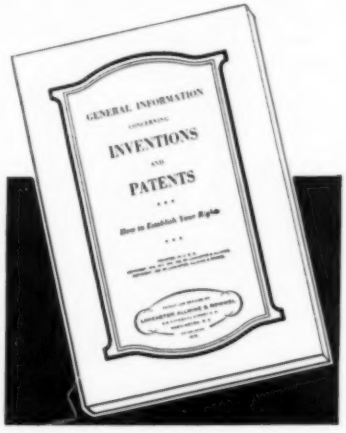

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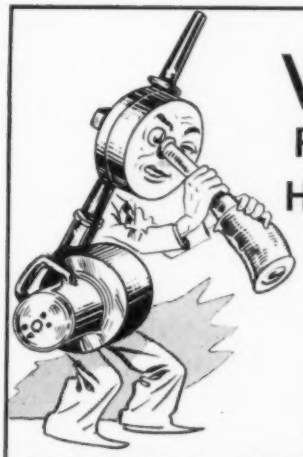

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INDEX TO ADVERTISERS

* For further details see announcement in 1942 SOAP BLUE BOOK

Alvox Laboratories 144
*American-British Chemical Supplies 132
American Can Co. 11
American Standard Mfg. Co. 147
*Ampion Corp. 126
Anchor-Hocking Glass Corp. 95
Anderson-Prichard Oil Corp. ..... May
*Aromatic Products, Inc. 15
Atlantic Refining Co. 89
*Baird & McGuire, Inc. 75, 100
Barrett Co. 136
Bobrick Mfg. Co. 16
Borne Scrymser Co. 150
*Breuer Electric Mfg. Co. 147
Buckingham Wax Corp. 98
Bush Pan-America Ltd. ..... Feb.
*Candy & Co. ..... Apr.
Chemical Supply Co. 134
John A. Chew, Inc. ..... May
*Antoine Chiris Co. ..... Apr.
*Clifton Chemical Co. 124
*Columbia Chemical Division 19
Commercial Solvents Corp. 118
Compagnie Parento 66
*Consolidated Products Co. 143
*Continental Can Co. ..... May
Cowles Detergent Co. ..... Apr.
*Crown Can Co. 46
*Davies-Young Soap Co. 7
*Derris, Inc. 94
Diamond Alkali Co. 6
*Dodge & Olcott Co. ..... 2nd Cover, 84, 85
*Dow Chemical Co. 96
P. R. Dreyer, Inc. 120
Dula Mfg. Co. 146
*E. I. du Pont de Nemours 4, 86
*Eastern Industries ..... May
Emery Industries, Inc. 68
Federal Tool Corp. 130
*Federal Varnish Co. 88
*Felton Chemical Co. 10, 76
Fezandie & Sperrle 145
*Firmenich & Co. ..... May
*First Machinery Co. 140
Florasynth Laboratories, Inc. 64
Franklin Research Co. 132
Anthony J. Fries ..... May
Fritzsche Brothers, Inc. 44
*Fuld Brothers 3
*General Drug Co. 93
*R. Gesell, Inc. 140
*Givaudan-Delawanna, Inc. 12, 13
*James Good, Inc. 146
Haag Laboratories, Inc. ..... May
W. C. Hardesty Co. 50
Hercules Powder Co. 82, 83, 97
*Hochstadter Laboratories 149
R. M. Hollingshead Corp. ..... Apr.
*Hooker Electrochemical Co. ..... May
*Houchin Machinery Co. 62
Huber Machine Co. ..... May
*Hysan Products Co. 9
Industrial Chemical Sales Division
W. Va. Pulp & Paper Co. 58
*Innis-Speiden & Co. 56
Interstate Color Co. ..... May
R. A. Jones & Co. 20
Ken-Ya-Pye 87
Karl Kiefer Machine Co. 64
*Koppers Co. ..... Facing 108
Kranich Soap Co. 56
Lancaster, Allwine & Rommel 146, 149
*A. P. Lee Co. 149
*J. M. Lehmann Co. 68
Geo. Lueders & Co. 48
Magnus, Mabee & Reynard, Inc. 92
Manufacturing Chemist 14
Maryland Glass Corp. ..... May
*McCormick & Co. 124
McLaughlin Gormley King Co. 91
Michigan Alkali Co. ..... May
Mirvale Chem. Co. 150
Monsanto Chemical Corp. ..... May
Moore Bros. Co. ..... May
National Can Co. 78, 79
Newman Tallow & Soap Machinery Co. 142
*Niagara Alkali Co. ..... Bet. 92 and 93
Norda Essential Oil & Chemical Co. 17
John Opitz, Inc. 128
*Orbis Products Co. 122
Pecks Products Co. 144
*S. B. Penick & Co. 99
*Pennsylvania Refining Co. 128
Philadelphia Quartz Co. 40
*Pittsburgh Coal Carbonization Co. 140
*Pittsburgh Plate Glass Co. 19
H. K. Porter Co. 72
*John Powell & Co. 80, 81
R. J. Prentiss & Co. 77
*Proctor & Schwartz, Inc. 70
Pumice Corp. of America 66
*Pylam Products Co. 144
*Reilly Tar & Chemical Co. 138
Theo B. Robertson Prods. Co. 147
*Rohm & Haas Co. 113, 114
*C. G. Sargent's Sons Corp. ..... May
Schimmel & Co. 134
Seil, Putt & Rusby 149
*Skinner & Sherman 149
*Foster D. Snell 149
*L. Sonneborn Sons 136
*Solvay Sales Corp. 52
Standard Silicate Co. 6
*Standard Synthetics, Inc. 18
Stillwell & Gladding 149
*Stokes & Smith Co. ..... Mar.
*Tar & Chem. Division Koppers Co. ..... Facing 108
Harry P. Trevithick 149
Jos. Turner & Co. 36
*Uncle Sam Chemical Co. ..... May
Ungerer & Co. ..... 3rd Cover
U. S. Industrial Chemicals, Inc. 42
Universal Chemical Corp. 147
Van Ameringen-Haebler, Inc. ..... Front Cover, 90
Velsicol Corp. ..... 4th Cover
*Albert Verley, Inc. 8
*Warner Chemical Co. ..... May
*T. F. Washburn Co. 130
*Welch, Holme & Clark Co. 70
*White Tar Co. of N. J. ..... Facing 108
Whittaker, Clark & Daniels 66
Whitmire Research Corp. ..... Facing 109
*Woburn Degreasing Co. 72
York Chemical Co. 146

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* * *

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* * *

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* * *

And the State of Pennsylvania was reported in the market for some 100,000 pounds of pine jelly soap,—not to mention about 12,000 gallons of cresylic, coal-tar and pine disinfectants. What's everybody going to do with all this stuff?

* * *

A number of new U. S. Government soap specifications become effective July 15, 1942,—chip soap, bar and powdered laundry soaps, cake grit soap, soap powder, salt water soap, floating soap, liquid soap, milled toilet soap and others. See Pages 161-165 of your 1942 *Soap Blue Book*.

* * *

Said a prominent janitor supply dealer in Chicago recently at the N.S.S.A. meeting: "It used to be service with a smile. Now it's a smile with no service." And, we add, in some places today you don't even get the smile.

* * *

Not so long ago, the oldest bird-seed company in the U. S. went out of business. For years, they had enjoyed 90 per cent of the total sale of bird-seed,—but they quit advertising because everybody knew them,—and soon everybody forgot them. There's a moral hidden away here some place if you can find it.

UNCO LILACENA

AN UNGERER SPECIALTY

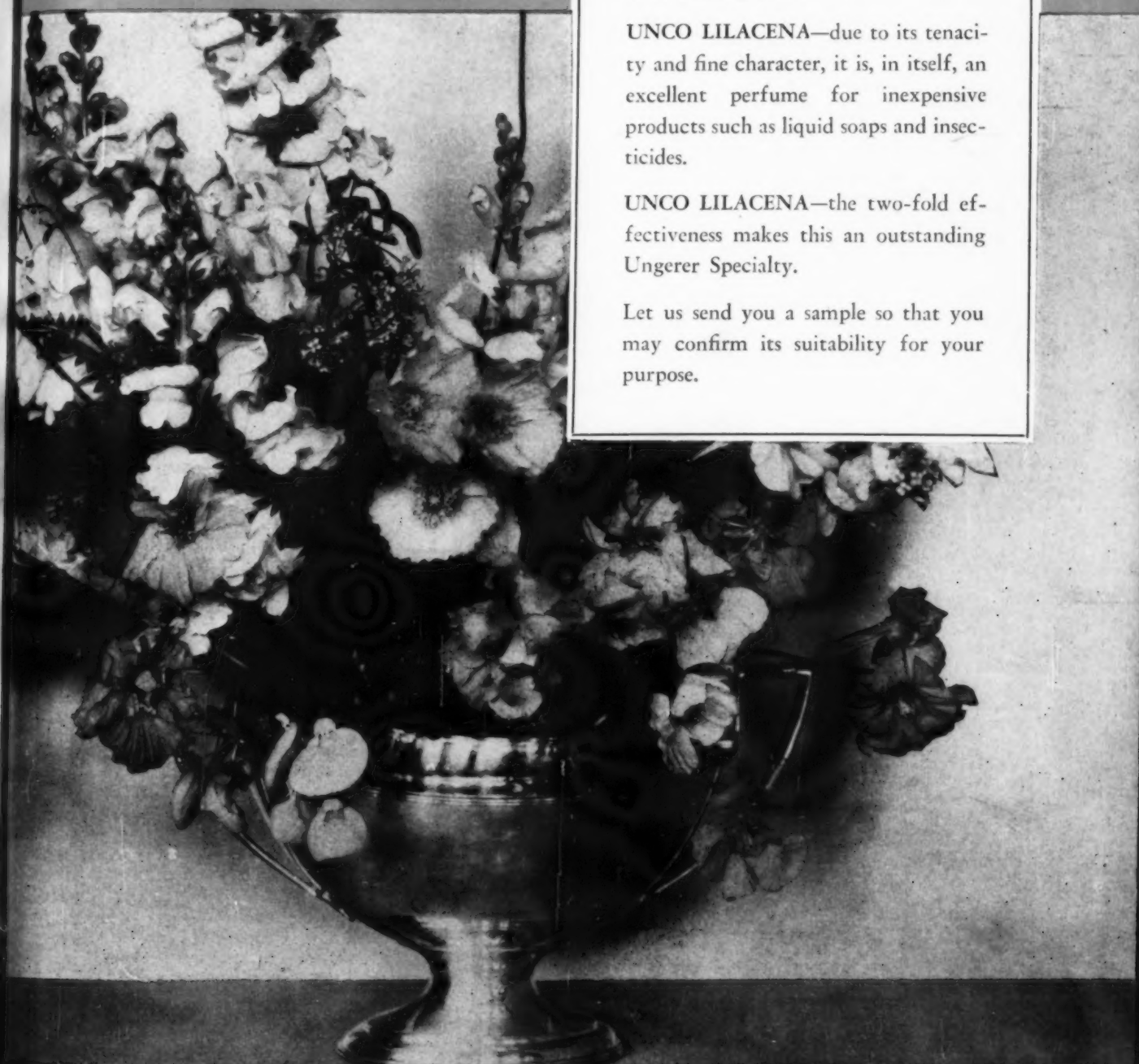
UNCO LILACENA— we recommend this moderately priced Lilac-type perfume oil for a wide range of uses.

UNCO LILACENA — an unexcelled base for Lilac or similar floral compositions when used in powders, toilet waters and creams.

UNCO LILACENA—due to its tenacity and fine character, it is, in itself, an excellent perfume for inexpensive products such as liquid soaps and insecticides.

UNCO LILACENA—the two-fold effectiveness makes this an outstanding Ungerer Specialty.

Let us send you a sample so that you may confirm its suitability for your purpose.



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